BUSINESS MANAGEMENT

Training and Service for Executive Work

Directing Sales and Traffic ** Securing Low-Cost Production

LA SALLE EXTENSION
UNIVERSITY
CHICAGO

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BUSINESS MANAGEMENT

Executive Manuals 5 and 6

DIRECTING SALES AND TRAFFIC ACTIVITIES—Being Executive Manual 5, on The Principles of Profitable Management, in a Complete Plan of Training and Service for Executive Work

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Investigated, organized, and presented by the research, consultation, and editorial staffs of LaSalle Extension University

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the advice and co-operation of

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59. How the Office Contributes to Control
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Practical Reference Guide

Outline of Business Activities
General Index of Business
Digest of Management Principles

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DIRECTING SALES AND TRAFFIC ACTIVITIES

Part I

THE MANAGEMENT OF SALES ACTIVITIES

Preceding executive manuals covered the broader movements and relationships of business as a whole. With those economic fundamentals in mind, we are now prepared for a preliminary survey of the more important problems of the main departments of a business; also for a study of the basic principles that apply in solving those problems.

We know that nearly all business concerns are organized to include departments of—

1. Sales, including advertising.
2. Production, including purchasing.
3. Finance, including credit activities.
4. Accounting.

No matter how small or large the business may be, those four departments—into each of which is grouped together a set of definite allied functions or activities—are found in the organization. In the larger business concerns these major departments are usually further divided into subdepartments and in addition, many specialized departments, such as traffic, correspondence supervision, research work, and so on, are created.

Securing Efficient Interdepartmental Relations. The executive who is able to maintain efficient interdepartmental relations necessarily understands the basic functions of all the main departments of a business, and this is true regardless of where he is placed in a business.

> **Each executive in every department must concentrate on his one big job in the light of his knowledge of how what he does is going to effect efficiency in other departments.**

This imposes upon every executive the necessity of understanding the major problems and the "workings" of other departments. A man may be efficient in handling his own particular work as such, but his value to the business will be discounted unless his efficiency extends to the point of handling his work in a manner that gives and gets real coöperation to and from other departments. Then only can any executive be said to be really efficient. The importance of this point as a factor in profitable management warrants all the emphasis we can give it.

In many cases good men fail to rise to better jobs in an organization, not because they lack industry and intelligence, but because they do not know how to coöperate efficiently with other departments; and they do not know how to do this because they are not sufficiently well acquainted with the problems and the work of other departments. Therein is the great value of this preliminary survey of the functions of the main departments of business. This survey, comprising this and three following manuals, will open up the major problems faced in the various departments of a business, and will emphasize the general principles which operate in their correct solution.

THE BASIC IMPORTANCE OF SALES MANAGEMENT

First, let us make sure that we understand the fundamental importance of the sales department. We know that sales management is very important in nearly every business, and that the development of every business is largely dependent upon the development of sales.

> **To gain the best volume of sales at the lowest possible cost of selling is the general objective of sales management.**

Broadly defined, the management of sales includes responsibility for the selection and effective use of all the means and methods of selling employed—salesmen, letters, advertising, and so on; it also includes selection and use of the channel or channels used in distributing goods or services to buyers and users, whether by jobber, retailer, agent, or some other agency of distribution.

CO-OPERATION

Sales management can co-operate with other departments by handing over substantiated reports concerning—

1. **Changes in local business and individual customers' conditions to the credit department.**
2. **Performance and quality of product and packing to the production department.**
3. **Local conditions or obstacles which affect deliveries to the traffic department.**

Other departments can likewise co-operate with sales management—

1. **Credit department by constructive service to customers which promotes goodwill.**
2. **Production department by improvements in product which give competitive advantages.**
3. **Traffic department by finding quicker ways to deliver, especially in emergencies.**

Economic analysis tells us that consumption controls production—that we produce in order to consume. But we must, in very many cases, produce *in advance* of sales. We should produce what we can sell at a profit. This requires—

1. Advance estimates of probable sales.
2. Making those probable sales come true.

If our estimate of probable sales is wrong, or if we fail to get expected sales, we lose. Failure to sell all of the output produced, or slowness in selling the output, is always costly; in fact, failure in selling is a general cause of many business failures. But failure to sell cannot always be laid at the door of the sales department, for inferior quality of the product or a relatively high cost of producing it or arbitrary credit policies may so greatly handicap the work of the sales department as to make it impossible to sell the output at a profit.

Two Basic Problems of Sales Management. Thus the management of sales includes the following two fundamental problems:

1. Forecasting sales possibilities and probabilities, often involving research work that reveals sales possibilities as well as study of past sales records that may serve as a guide to estimates of future sales. Research work usually takes the form of market surveys out in the field where special investigators secure vital facts about uses of the product, buying habits, competing products, and many other facts which aid in deciding on the best selling policies and methods.

2. Selecting, organizing, and directing the best means and methods of selling the quantity of product produced, including consideration of all selling methods and forces; also consideration of all available channels of distribution from seller to final users or consumers of the product. An executive must recognize the fact that—

> **Goods are not completely sold until they are bought and paid for by those who finally use them in production or who personally consume them.**

If a manufacturer uses retailers and jobbers in getting his goods into the hands of consumers, his problem of sales includes, in greater or less degree, responsibility for jobbers' sales to retailers and for retailers' sales to consumers. Coöperation with the distributing agencies that we depend on for our sales is fully treated in the forthcoming executive manuals which cover selling and sales management in detail. There, also, we shall get well acquainted with all essential principles that directly apply in efficient selling and sales management. Here in this preliminary survey, our aim is to understand the basic problems of the sales department and the broader principles applied in solving them.

DEVELOPING AND HANDLING SALESMEN

First, consider the important problems of developing and directing the sales force.

It is up to the sales executive to see that each new salesman is trained according to some well-defined plan, and that the older men on the sales force keep themselves in training, for there is no end to any man's development of selling ability.

Suppose you are an office manager. A salesman comes in to try to sell you adding machines. He is a keen observer, a good listener, and he seems to grasp your problems, not only your need for a means of accurately and quickly adding columns of figures, but also all your interrelated problems, such, perhaps, as the seasonal features of your need, the class of employes you have, possibly the disposal of old equipment, the investment in an adding machine as weighed against frequency of use, exactly how to figure the net profit to be gained by using an adding machine, and so on. You are soon conscious that you are talking with a business-man type of salesman who is at home with business problems, who can see his proposition from your point of view; therefore, a man in whom you can place confidence.

Another salesman of adding machines confines himself to an ill-concealed fixed selling talk. He obviously attacks any objection according to a fixed formula, but offers little that is constructive and nothing beyond the particular machine he is selling and its features. He does not seem to understand your point of view; his view of your problem is narrow and cramped. His knowledge of business policies and practice is obviously meager; he is not the business-man type of salesman.

You have no hesitation in choosing between the two salesmen above mentioned. Business men have more confidence in the "business-man" salesman when they consider the purchase of business equipment, materials, or supplies.

The successful director of sales knows this, and in training his salesmen he does not neglect their development as business men, no matter what the line, particularly if it is sold to business men. But general business training, of itself, is not enough.

To the salesman's all-around business training must be added an intimate knowledge of the line he is handling.

Certainly a salesman should be thoroly acquainted with his product—what it is, how made, and especially what it does, how, and why. The real problem, however, is how the salesman can correctly apply his knowledge of business and of his product as a means of making more sales at low cost.

How the Salesman Should Use His Knowledge. While showing a prospective customer some Panama hats, a salesman stopped to recite a long story of just how the natives of Equador made the hats under water, how they were shipped to this country flat in large bales, and so on, in great detail. Most of the information given was interesting, and would make effective selling talk if given in small doses to picked individuals; but all this detail only bored this particular prospect, causing him to seek the first opportunity to break away without buying. If the prospect were undecided about getting a Panama hat in this case, how much better it would have been merely to have briefly reminded the prospect about the method of manufacture as a reason for good wearing qualities.

The fundamental mistake made by this salesman was in violation of the principle of selling which emphasizes the importance of being able to sense the impression that a selling talk is making in the mind of the prospective buyer as the salesman proceeds with his selling talk. He did not see, as he talked, that his long story about Panama hats was only boring his prospect.

A salesman must not only have a thoro knowledge of his line, but also must be trained to use this knowledge effectively.

In other words, the training of a salesman should go further than merely to give him the facts he needs; it should include a plan of selling, based on sound principles, that he will follow in his daily practice of salesmanship. He should know and be able to apply the basic principles of successful selling practice, as fully explained and applied in the larger division of this course which covers selling and sales management. These principles underlie effective use of facts, and unless a salesman can effectively use his knowledge, that knowledge may, as in the case of the Panama-hat salesman, do more harm than good.

Sales Manager versus Manager of Sales. Nearly every business employs more than one kind of selling method. Perhaps in addition to salesmen, sales letters are employed, or a catalog, or mail-order advertising. Usually one executive has charge of all the different kinds of selling activities. He is a "manager of sales" rather than a "sales manager," for the latter term is commonly confined to the management of a sales force in the field. Management of sales—usually in the hands of a "general sales manager" or a "director of sales" or a "vice president in charge of sales"—includes supervision of advertising, sales correspondence, direct-by-mail sales promotion; in short, supervisory control of all other selling activities as well as the work of a sales force.

Each of the various methods of selling used has its own peculiar problems, and each may require a somewhat specially trained executive in immediate control of it, his work supervised by the general sales manager.

But the advertising manager must know more than advertising. He must know the problems and methods of the sales manager who has direct charge of the sales force in the field. Likewise, the sales manager must know a great deal about advertising. For salesmen must take full advantage of the advertising, and the advertising must be planned in the light of the help it can give to the salesmen.

Both salesmen and advertising men are driving toward the same fundamental objective—the best sales volume at a low cost of selling. All selling activities, whether personal or printed, and whether they directly or indirectly help make sales, have this same basic objective; and the value of every kind of selling activity employed should be gauged by the extent of its influence on sales in relation to its cost.

QUALIFICATIONS OF A MANAGER OF SALES

Obviously, there is no one type of sales manager any more than there is one type of general manager or treasurer. In the case of an organization wherein executives higher up give the sales manager a set of sales policies ready made, and continue to exercise careful supervision of the carrying out of these policies, the requirements in a sales manager are much less exacting than in the case where the sales manager himself is required to develop the sales policies and has full authority and responsibility in all sales matters.

All-around business training makes possible the transmission to customers of sound ideas on—

1. **Logical arrangements of store or shop.**
2. **Selling methods which overcome objections.**
3. **Effective ways to collect.**
4. **Records easy to keep.**
5. **Advertising which works.**
6. **Costs of operation.**
7. **Competitive conditions.**
8. **General business conditions.**

The type of man in charge of sales varies with conditions. Yet, in any case, a sales manager must possess certain outstanding qualifications if he is to serve any business to the best advantage. Foremost, he should be energetic, enthusiastic, and at once a thinker, a planner, and a doer—a combination not easily found. Let us remember that—

> **Misspent energy is the result when enthusiasm is not coupled with ability to plan.**

Competition, in many cases, has brought selling to a point where the difference in one sales staff over another is often reduced to a small margin, and this small marginal advantage is gained mainly by better executive *planning* rather than thru differences in the ability of the individual salesmen.

As in other executive positions, sales managers must be resourceful leaders, with initiative and good judgment; particularly, good judgment of men. Their knowledge of the market must be extensive and intimate, and their ability to observe and to look ahead must be marked. Such qualifications stand out as of particular importance to sales managers whatever their line or their status in the organization.

Must the Sales Manager Be a Good Salesman? Sales management, in fact, is no longer only a matter of forceful personality; and to hold a record for selling does not *of itself* qualify a man for sales management. In fact, under certain conditions he may have little personal selling ability and yet may make good as sales manager. But he must know the character, requirements, and the principles of good personal salesmanship.

> **More and more, sales management is becoming an executive position calling for general executive qualifications—breadth of view, good balance, and sound business judgment.**

A large amount of sales direction, especially for larger firms, is done at a distance, and this calls for organizing ability, broad knowledge of markets, and for general executive ability, even more than for personal ability to make sales. But every sales manager can make good use of all his skill in salesmanship in the "sale" of greater enthusiasm, courage, loyalty, and industry to his men.

Altho other requirements than ability to sell may be more important in many large sales organizations, yet the best sales manager, particularly for a small sales organization, is the man who can himself go out and sell, who can personally train his men, tackle knotty prospects as object lessons, and, perhaps, do each job himself better than any of his men could do it. Furthermore, whether the sales organization is large or small, selling ability is a great advantage to the sales manager. But a sales manager needs much more and broader training than that required for success as a salesman, particularly so if his responsibility includes the development of sales policies; for the—

> **Development of the right sales policies requires a sales manager who, above all else, is a broad and capable business man.**

A man may get along fairly well as a sales manager even tho he does not possess some of the requisites which are conducive to strong personal salesmanship as applied to his product or service. But he cannot get along well unless he is at least trained in the technique and fundamental principles of selling, as these principles are developed in Executive Manual 20.

WHERE SALES MANAGEMENT TOUCHES OTHER DEPARTMENTS

Let us now consider, one by one, the principal activities of a business that both affect and are affected by the sales policy. They are as follows:

Advertising and distribution.
Production.
Traffic.
Credit granting.
Financial administration.

When the way to sales is well paved by advertising, this, in many cases, lessens the difficulty of selling thru salesmen; and altho advertising may not lessen the difficulties of the sales manager's job, it changes the character of his work somewhat. More of the broad business ability of an able director of sales is called into use if he helps in planning the advertising as a part of the whole sales campaign, and advertising should always be planned as an interlocking part of sales activities.

Management of Sales Includes "Marketing." Successful management of sales also presupposes a full understanding of the principles which underlie choice of the channels or paths of "marketing"—that is, of getting goods distributed from producer or seller to user or final consumer. There are several methods, but concerning all of them this fact stands out:

> **The closer a producer or seller is to the final users or consumers of what he sells, the closer control he is able to exercise over his real market—the final consumers or users of his product.**

Consider the manufacturer who tries to avoid the details and added responsibilities of selling direct to jobbers or retailers. He disposes of his entire output thru one or very few brokers or agents. He has the advantage of being free to devote all his attention to manufacturing problems, but he may pay for this freedom by having less control of the complete sale of his output on into the hands of users or consumers. Many old-established businesses are successfully conducted on that basis, but some have so fallen under the control of their brokers or agents that the ownership of the business itself was eventually lost to them. It is, in fact, a general principle of profitable management that—

> **The stability of a business is largely proportional to the degree of control it exercises over sales to the final users or consumers of what it sells.**

By distributing thru jobbers, who handle his product, a manufacturer may have better control of his market than when he sells his entire output thru one or a few selling agents. But he may suffer if many of his jobbers take little interest in reselling his products; he may find it more profitable to sell direct to retailers.

If his product is marketed under the jobber's private brand—if he puts the jobber's label on his product—he gets little or no direct advantage of the good will which his product creates thru its excellence. But larger sales to fewer jobbers, or brokers, or agents, altho the margin of gross profit is relatively small, has the advantage of lower selling expenses and less credit and collection expenses; in fact, costs may in some cases be reduced sufficiently to give him a more satisfactory net profit by selling to fewer buyers.

Advantages in each case are weighed against disadvantages when deciding upon the channel of distribution. This and other important marketing problems will be fully treated in the section on selling and sales management; also again in the section on advertising in relation to the advertising problem of a business. Here in our preliminary survey we should recognize the fact that the marketing problem is, fundamentally, how to get our goods into the hands of final consumers or users at the least cost of distribution.

The Relation Between Production and Sales. While estimated sales possibilities and probabilities should control the volume of production, yet it often happens that an arbitrary increase or decrease in production causes enforced changes in the means and methods used in selling, in which case production, to that extent, may be said to control sales effort. However, good business policy, in nearly every case, recognizes the basic fact that—

> **Production is for consumption, and sales probabilities should largely control the kinds and quantities of output.**

Production, on the other hand, does influence sales in every case. There are various ways in which producing activities can help sales. Better workmanship, improved appearance of the product, rigid inspection, proper packing, the following of shipping instructions to the letter, unvarying quality, lower costs of production which permit a price that compares favorably with prices of competing products or services, and so on, all help to build repeat orders and make selling easier.

But neither the production heads nor other executives can coöperate to the fullest extent in solving the sales problem unless they know what sales problems are. It is equally necessary for the manager of sales to understand the basic problems of all other departments. He must shape up his sales policies and plans to give production its best opportunity to attain low costs.

If the business is seasonal, and more lines must be sold to keep the factory organization intact during the dull seasons, sales plans and policies are designed, if possible, to keep the factory busy the whole year around. If it is impossible to keep some highly specialized machinery of a factory busy making the product for which the machinery was specially designed, it may then become necessary for the sales department to sell another product of an entirely different kind, the making of which requires the use of the specialized machinery.

A New England hosiery plant had a considerable amount of expensive machinery which was especially adapted to the manufacture of a cheap grade of socks. The demand for this product fell to almost nothing for a long period. Then, to keep the factory going, a knitted floor mop was manufactured. It was asking a good deal of a sales department, used to selling socks, to dispose of floor mops. But it was done.

Thus there are two sides to sales and production relations:

1. Adapting sales to factory requirements.
2. Adaptation of output to sales.

This question of the extent to which production should adapt itself to sales and sales to production is fully treated in the regular section on sales management. Let us now consider, briefly, the relation of sales and credit activities.

Coördination of Sales and Credit Activities. Credit, of course, is closely connected with sales activities. A sale is not really completed until the goods sold are paid for. In some cases it is easier for a salesman to sell the buyer who is a doubtful credit risk because there is less competition for the business of that buyer; the probability of prompt payment from him is low.

Some sales managers classify their customers according to credit ratings, and the salesmen are instructed to concentrate upon those customers who, in all probability, will pay promptly.

This practice is not advisable in all lines of business, but in all cases it is found to pay to have close teamwork between the sales and credit departments; and in many cases it pays to stimulate the efforts of every department toward serving desirable customers as well as possible, thus clinching tighter and tighter the permanent good will of those customers. This involves a principle of sales management, as follows:

> **It is important to strive for improvement in the ''quality'' of customers as well as for an increase in the quantity of customers.**

The idea of serving best those who most deserve to be served well is often followed as a general policy. It gives an advantage to customers of sound financial responsibility, and therefore is a good thing for business as a whole. Under this policy the better credit risks—those who pay their bills promptly—get the best service if it is impossible to give all customers this same brand of service. Consequently, those buyers who get relatively poor service because they are "slow pay" will strive to get better service by paying more promptly, and this requires of them more efficient handling of their business, or of their personal affairs if their purchases are of goods for personal use. Thus the general policy of serving well those customers who most deserve to be well served tends to help accomplish a general increase of efficiency.

Traffic Conditions and the Sales Function. The sales manager is also vitally interested in traffic problems. Great harm is done, and in the long run sales expense is increased, when goods sold are not delivered in good condition, in good time, and at the lowest possible cost of delivery. Poor traffic service often results in losing orders to a competitor who can meet delivery requirements more satisfactorily.

A close coöperation between traffic and sales heads makes the problems of both easier of solution. Additional points in this connection are brought out in the survey of traffic problems which immediately follows this preliminary survey of sales management.

> **The fundamental principle involved in the relation of sales and deliveries is that deliveries and sales must be made to facilitate each other as much as possible.**

The sales department must aid the traffic and shipping departments as much as possible, as by making sure that any customer preferences or requests concerning routing and packing are sent to the traffic department, and by having salesmen guard against delivery promises that are impossible to keep.

A practical adaptation of deliveries to facilitate sales is the practice of a grocery concern in a large Eastern city in following its winter customers to the shore resorts in the summer with an enlarged range of delivery service by means of motor trucks.

The Influence of Finances on Sales Policies. Nearly all general sales policies are influenced by the desirability of gaining a rapid turnover of working capital. A merchant endeavors to buy and sell, so far as possible, only what will move quickly at a profit. His sales policy aims at a quick turnover of stock, which serves to cut down the amount of working capital required in relation to sales volume.

> **The financial principle of making each dollar invested earn a maximum of net profit is applied by a vigorous sales policy that boosts sales volume and keeps down the cost of selling per unit sold.**

This matter of the relationship between the sales end and the financial end of the business is important. Working capital must in many cases expand in proportion to the volume of sales; but in such cases, if expansion of capital is not wise it may be advisable to make certain adjustments designed to hold down sales volume.

Where Price Enters Sales Policies. The price problem of any business—fixing the price at which to sell the output—is partly a sales problem, partly a cost-of-production problem, and partly a problem in business finance.

Sometimes this problem is a question of cutting prices to a point which, in dull seasons or during a business depression, will bring in a sufficient volume of sales to hold an organization together and keep costs down, for overhead costs tend to remain about the same altho the amount of production may vary.

A manufacturer of radiators has succeeded in greatly reducing his seasonal fluctuations in the volume of shipments and in cutting down the average of stock carried thru the year and in greatly reducing costs by establishing variable prices on deliveries at different times of the year. In those months during the year when the volume of shipments is highest, prices are likewise highest. Buyers of radiators get a price advantage if they are willing to take deliveries during dull seasons. This plan of variable prices according to season was worked out in the sales research division of this sales organization. Other radiator manufacturers follow the same plan.

This matter of fixing the right selling price, especially the problem of deciding upon a change in prices, is extremely complex and important, and will be considered in detail later on; for it is not the purpose of this preliminary survey of sales management to treat sales problems in detail. In this whole section on principles of profitable management, in fact, we are getting the viewpoint of efficient management in general, with particular emphasis upon the relations between different departments and activities.

The Growing Importance of Analyzing Sales Expense. Sales management recognizes the importance of analyzing selling expense. Not only does nearly every business man who watches all sources of profits know that some of his lines cost more to sell than others, but also he knows that the expense of working different territories varies, and that some accounts may be carried at an actual loss, so difficult is it to reach and sell those customers. Analysis of sales by customers, territories, and lines reveals the facts.

Sales management must always view the desirability of greater sales volume in the light of the amount of additional selling expense required to get it. Unsound calculations of profit to be gained by straining after larger and larger volumes of sales are easy to make. If $100,000 in sales returns $15,000 in net profit, then we are likely to say that doubling the sales volume will at least double the profits. If we are sufficiently imaginative, we see in $1,000,000 of gross sales the rather neat sum of $150,000 available for dividends. The calculation is simple—so simple that it should arouse suspicion. Altho greater sales, even at greater selling expense per unit of product sold, may yield an increase in total net profits, yet we must remember that—

Sooner or later in the expansion of sales volume comes into action the law of diminishing returns, which leads eventually to a lowered net profit and even a loss if sales are further increased, unless offsetting measures, tending to reduce costs, are introduced.

Unless we are very careful in our efforts to double, and then perhaps redouble, sales volume in very short periods of time, we shall find trouble coming in the form of greatly increased costs of selling per unit sold. Increasing selling costs, if not checked, may cause added sales volume to be gained only at a loss of net profit. In fact, it is not an uncommon experience to find a decrease in net profits at the end of a year, when during the year much effort and expense have been used in gaining a predetermined increase in sales volume. The additional business may be "bought" too dearly, as when it is achieved by superhuman efforts in barren territories or against competition that has too great an advantage in those territories, such as advantageous freight rates; or it may be secured by too great price concessions, or by overloading buyers with more of a product than they need—a boomerang later on—or by selling many who do not readily recognize their need for the product, therefore requiring too great expense in selling them, and so on.

But a running analysis of selling expense furnishes the sales manager facts by which he may determine what territories are worth while, what customers are worth while, and how far it will pay to go out after new business—including, of course, consideration of the effect of new accounts on future, as well as current, sales volume and selling expense.

Sales management may be charting its course with misleading averages if it does not recognize the principle of analysis applied to selling expenses. This matter of analyzing selling expenses is fully covered in the larger selling and sales management section of this training course, and also in the accounting and statistical control section.

MANAGEMENT TAKES A DEFINITE STAND ON "SERVICE"

What place has the service idea in sales policies? Service, to be sure, is an overworked word, often loosely used. But service characterizes every business. It may be the manner in which guaranties are made good; it may take the form of helping dealers resell the goods, if sold thru dealers; possibly it is giving time on accounts; perhaps it is keeping a product in repair after the sale; or it may reside in sincere practice of the old idea, "Your money cheerfully refunded." In this latter case, a customer may never ask for his money back, yet he prefers one merchant over another because of the greater assurance this policy gives him, and, incidentally, he may be somewhat less inclined to ask for his money back because he knows he can get it.

> **Whatever the exact nature or type of service, it can always be said of it that it is giving customers something over and above what the literal contract of sale calls for.**

The more progressive the business, the more actual and tangible is the service it provides. A well-worked-out sales policy, as a matter of principle, will take a definite stand upon the character and type of service that is provided. This important matter also is fully covered in the main section on selling and sales management.

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Such are just a few of the many problems and principles involved in attaining the best volume of sales at low cost. It is now plain that the best volume of sales for any one period of time is not necessarily the largest volume it would be possible to get. But it is the volume which, in view of selling costs and in relation to costs of production and of financing the business, serves to yield the best net profit from operating the business. Gain of net profit is the final objective in operating every business, and this objective compels teamwork between departments.

Goods sold must be delivered; and the cost of delivery, whoever pays its—whether buyer or seller—is a factor in sales. Ability to cut delivery costs, in fact, may be the deciding factor in many sales. Therefore, let us next get a working knowledge of how the traffic problem is handled as a factor in attaining low-cost distribution of merchandise.

DIRECTING SALES AND TRAFFIC ACTIVITIES

Part II

Directing Traffic Activities

The average number of freight cars loaded each week in the United States is close to one million—over fifty million cars loaded in a year—and many of them moved a thousand miles or more!

The freight traffic of the world, by railroad, ships, and motor trucks, is of gigantic proportions; and this vast movement of freight is steadily growing in volume year after year.

Efficient Transportation a Vital Necessity. The success of business in general is dependent to a great extent upon the efficiency of various means of transportation, including the mails and express as well as freight shipments. In Executive Manual 3 we saw how the slowing up of shipments during the post-War boom in 1919, and particularly how delays in shipments by the railroads, caused by congestion at freight terminals, crippled business activity by causing delays in deliveries, which interfered with the carrying out of production schedules in factories and played havoc with efficiency in operating wholesale and retail houses. Efficient transporting service is vital to business prosperity.

The greater the number of shipments and the larger the total bulk and weight of incoming and outgoing shipments in any business, and the greater the variety of goods shipped, the more dependent the business is upon good transportation; and the more difficult is management's problem in directing traffic.

In many lines of business, directing traffic has become one of the most important and highly specialized functions of management. No one who wants a complete grasp of the essentials of profitable management can neglect careful consideration of the fundamentals that underlie efficient traffic management. A traffic problem exists in nearly every business, and its correct solution is directly related to the operation of many other departments in the business, as we shall see.

How Traffic Limitations May Restrict Business. In not a few cases, a new business enterprise cannot be started, or, if started, fails, because its management did not appreciate the importance of having the right traffic facilities at hand.

A young man had an option upon some sand leases in a Middle-Western river. The leases covered two separate locations. One railroad passed by one of these and another railroad was close to the other. This seemed to satisfy this young man as to traffic requirements.

He sought out as a prospective business partner a friend who knew something about the sand and gravel business. It so happened that this friend had made a special study of traffic management. He looked the situation over and soon saw that their capital would not be sufficient to install two pumping plants for removing the sand, one at each location; that therefore they must work the locations one at a time. Then he noted the fact that, altho the two railroads crossed near by, there was no transfer switch between them which would enable cars loaded on one road to be shipped to customers on the other. He found also that the territory served by either railroad alone was not large enough to absorb the steady output of one lease; he knew that the market for sand was restricted to a relatively small locality on account of transportation costs.

This prospective partner tried to persuade the roads to put in a transfer switch, but he failed in this. He then decided that these conditions made the proposition unattractive, and he turned it down.

The young man who had the leases, however, felt that a demonstration to the railroads of the volume of business to be done would convince them of the wisdom of putting in the proper switching facilities. His excessive optimism led him to go ahead alone and install a pumping plant on one lease. But his venture soon failed. The expense of installing switching facilities, if incurred by the railroads, would, in fact, not have been justified, all things considered. His friend, with better insight into traffic problems, had anticipated the railroads' stand on the matter.

THE MANY FUNCTIONS OF TRAFFIC MANAGEMENT

That experience, however, illustrates only one side of the importance of traffic considerations. Let us now see the great value of efficient traffic management in the daily operation of a business.

The work of traffic management long ago ceased to be largely a matter of pushing thru freight claims. It is to-day more concerned with such matters as classifications of freight and changes in rates, at times requiring presentation of desirable changes in rates or classifica-

A few causes of the delays in shipments of which the effect is reflected in sales and production, are as follows:

1. **Circuitous routes.**
2. **Congestion on line or at terminal.**
3. **Strikes.**
4. **Wrecks.**
5. **Bad-order cars.**
6. **Car shortage.**
7. **Heavy snow or ice.**
8. **Illegible marks on packages.**
9. **Cars placed late or out of order.**
10. **Necessity for recooperage in transit.**
11. **Delays in forwarding or errors in shipping documents.**

tions or other complaints before the Interstate Commerce Commission. A traffic manager must know the bases for determining classifications and why they vary in the Eastern, Western, and Southern divisions of the country, and he must know how to take full advantage of this knowledge, as by shipping and billing a product in the form that gives it the classification that carries the lowest rating.

Traffic management determines the quickest and cheapest routing of freight. This function, in many cases, may become an important competitive advantage over other producers whose traffic department is not so ably managed, because merchants, for example, want to have the goods they buy laid down in their stores at low cost, including the cost of transportation.

Then, too, a primary function of traffic management embraces the problem of preventing, in so far as possible, lost shipments and goods damaged in transit. This prevention is more important in gaining net profits for a business than is the work, be it ever so efficient, of tracing lost shipments or of entering and collecting the various kinds of claims against transportation companies. The general principle involved is this:

> **In every business and in every department of a business, efficiency in the prevention of losses is fundamentally more profitable than efficiency in recovering losses that might have been prevented.**

Like the modern doctor who prevents disease, the traffic manager must prevent losses, as well as "cure" them by collecting claims; and in doing this his activities reach into the production, sales, purchasing, and other departments of a business. The traffic manager, for example, can often extend the sales territory by speeding up deliveries and by cutting transportation costs to far-away customers, or he can cut the time and cost of having manufacturing materials and supplies or merchandise laid down in factory or store from various out-of-town sources. The volume of business done by any shipper is greatly influenced by traffic management. Let us remember that—

> **Any conditions which either retard the flow or increase the cost of inbound or outbound traffic will tend to curtail production or limit sales.**

When we really see and understand the great influence of traffic activities upon other activities in the business, we can appreciate the high degree of importance attached to the traffic department by many business concerns.

Traffic Must Get as Well as Give Coöperation. Traffic management must get coöperation from other departments as well as give them coöperation. If, for example, an assembled product can be shipped at a much lower rate in knocked-down form, with relatively little inconvenience to the customer in view of the saving in cost of shipping, traffic management may well insist on shipping the product in knocked-down form, for—

> **Cutting the cost of shipments, incoming as well as outgoing, is a fundamental function of traffic management.**

That and the problems of securing and making timely deliveries are the two fundamental objectives in directing traffic.

Many suggestions of changes to be effected in other departments originate in the traffic department. One concern had a product which, when packed, was a few ounces too heavy and a few inches too long in one dimension to permit parcel post shipments, which would be better and cheaper for this product. A simple change in the design of the product, easily made, permitted this shipping advantage. The traffic manager of another business suggested the same kind of advantage by having the product divided into two parts, each to be shipped under separate cover by parcel post, and he got the coöperation of the production department and the consent of the sales department to this change in the method of delivering the product.

These cases cause us to recall again an important principle that applies in all management:

> **Every department of a business must be able to get the coöperation of other departments as well as to give them coöperation.**

Getting the coöperation of other departments in many cases requires the knowledge of principles of good salesmanship and ability to apply them in selling the idea of coöperation to others.

Interpretation of the principle just cited does not mean that any one department should always push thru, by sheer force of sales strategy, another department's acceptance of suggestions which require the coöperation of that other department; for, of course, the changes suggested may involve expense or losses in that other department which more than offset the gain that would come to the department that initiates the suggestion. In suggesting a new design of a product to give it a more favorable form for shipping, it might well be that the expense of making the change or the risk of impairing the service of the product as a result of the change in design, or some other objection, would make it impractical to carry out the change. Forcing thru such a change by means of salesmanship, or otherwise, would not, in reality, be good salesmanship for the business as a whole.

THE RELATION OF TRAFFIC TO SHIPPING

One thing never to be lost sight of for a single moment in the profitable management of any department is the principle that—

> **Every plan and every action in every department of a business should be guided by keen appreciation of the true value of that plan or action in promoting gain or profit for the business AS A WHOLE.**

That is the principle which underlies the necessity of willing and intelligent coöperation between departments and between subdepartments and between individual workers everywhere in the business.

To gain better application of the foregoing principle, two or more allied activities are often grouped under one head instead of placing them in separate departments. This kind of organization is desirable in the case of traffic and shipping.

It is maintained, and on good grounds, that shipping is always a function of traffic management; that all shipping orders should be transmitted thru the traffic manager's office. This is particularly desirable in times of car shortage and traffic congestion, when restrictive rules governing car loadings must be complied with and the traffic must be moved as quickly as possible in the face of restrictions.

These restrictions are commonly called embargoes, and often originate in the form of orders from railroad officials to local freight agents requiring them to route no more cars for certain points or thru certain points where traffic is congested, until the embargoes are officially lifted. Sometimes embargoes are not lifted until several weeks have elapsed.

> **It is obviously necessary for the traffic manager to keep his eye on rail embargoes, to avoid them by using other routes or roads, or other means of transportation, where possible and feasible.**

In some of the smaller business concerns the shipping clerk does the routing—that is, determines the route (the particular railroad or steamship company or trucking line to be used in each shipment)—but the modern tendency is to have a traffic department in which all shipments are routed.

When congestion of traffic and other adverse conditions prevent the use of regular routes, this condition requires full information as to all available routes, and the various rates that apply in the different routes. With complete and up-to-date tariff (rate) files, embargo files, classifications, and all other information about current traffic conditions at hand, the full-fledged modern traffic department is in a strategic position to determine the best routing of all shipments.

Sometimes orders come thru bearing the customer's preference as to routing. Good traffic management checks up this specified route to see if it is the most economical route, and, at the time of shipment, ascertains if the route is open—for it is always possible that some new embargo applying to the customer's choice of route might keep the shipment waiting until the embargo is lifted.

What Titles Mean in Management. Whether the man who determines the routing of shipments is called "shipping clerk" or "traffic manager" makes no great difference, so long as he capably does his work. This is true in the case of all titles, because—

> **It is not the title conferred, but it is the extent and character of responsibility delegated to a worker and the thoroness, dispatch, and economy with which he discharges such responsibility, be it great or small, that is of real importance in profitable management.**

Of course, good organization and operation requires all responsibilities in running the business to be so divided that each person engaged in management has definite functions to perform, and that he is well qualified to perform them, and it is convenient to give each manager in the business a title which indicates his function in the business. The foregoing emphasis upon a manager's functions rather than his title is not derogatory to titles as such, for titles directly aid in the development of profitable management.

Do you have in your business a "traffic manager," well qualified to take care of the important functions of this job; or do you have a "shipping clerk" who may or may not be well qualified? It of course makes no essential difference what you call him so long as he is efficient in taking care of the full quota of responsibilities that relate to his job.

How the Difficulties of Traffic Management Vary. In some cases, a shipping clerk who knows very little about classifications and rates, and is just an ordinary good clerk, can adequately take care of routing. But these cases are rare—so rare, in fact, that it is difficult to find one case where the traffic problem is not of sufficient importance to warrant having someone in the organization who is able to route shipments advantageously; that is, if there is any volume at all of outgoing or of incoming traffic.

Yet, of course, the relative importance of good traffic management does vary with different lines of business. Take the case of a very large wholesale house, with from five to ten thousand different articles constantly coming in from hundreds of sources and being shipped out to thousands of customers daily to all parts of the country. Here traffic management which adequately protects the interests of the house and all its customers is an exceedingly complex function, requiring not only much technical information about routes and rates, classifications, and many other regulations, but also ability to get coöperation from the local freight agents; also coöperation from those in the business who have immediate charge of preparing and packing the innumerable items for shipment, as previously suggested.

> **The man who determines the route that will lay down goods in far-away places without delay and at the lowest possible cost of transportation must know how all the goods are packed and see to it that they are so packed as to permit the most favorable classifications.**

The man who knows this— and it involves a great deal more knowledge than can be suggested in this brief treatment of traffic problems—and the man who is able to do all this, thereby becomes an important contributor to increased profits, not only thru savings he makes on incoming shipments, but especially thru making better satisfied customers of the house.

The traffic problem of the large wholesale house is quite different from the traffic problem of, say, a coal mine, which ships one product at special commodity rates, based upon the amount of tonnage it gives the railroad to carry during a specified period of time—the greater the tonnage, the lower the rate, as a rule. Even in such a case of relatively simple conditions, however, the man in charge of traffic must be able to make the best possible arrangements as to rates, coal cars supplied, movement of the cars, and other forms of service from the railroad.

It may be said, in fact, that every business engaged in manufacturing or producing primary products, such as coal, lumber, iron ore, and so on, has a traffic problem of sufficient importance to warrant having one man in the organization who qualifies as traffic manager, altho he may also have other duties as well.

Traffic Management Is a Highly Complex Problem. Enough has been said in preceding pages to emphasize the great importance of traffic management as a phase of profitable management. It is always necessary for general management to recognize fully the importance of efficiency in handling its traffic problem to see to it that this function is placed in responsible hands.

Traffic management is seldom a simple and easy problem. Often, as in the case of the wholesale house above mentioned, it is highly complex, including the right use of a great mass of policies, principles, facts, and figures that are not easy to use or to understand. Traffic problems range all the way from such important matters as locating import firms at points where traffic conditions are good, or coördinating the traffic departments with other departments in the business, down to innumerable but important office details.

The traffic problem may call for the exercise of good judgment in such matters as that of billing a less-than-carload shipment as a carload at minimum carload weight, when the carload rate lowers the cost of shipping in comparison with a less-than-carload shipment at a higher rate. For example, 22,000 pounds of freight at a less-than-carload (L.C.L.) rate of 15 cents a hundred would amount to $33.00, whereas if the same shipment were billed at the carload rate, minimum weight (30,000 pounds) at 10 cents a hundred, the total charge would be $30.00, a saving of $3.00 on the shipment. Savings of this kind, even tho small ones, often contribute a good deal to net profits in the course of a year. If the customer pays the freight, as he does in many cases, this profit comes thru greater customer satisfaction, which promotes increased sales at lower selling costs.

A good traffic department can in nearly every case show a profit on its work both directly and indirectly by its savings on both incoming and outgoing shipments, by its savings on claims, revision of freight bills, avoidance of demurrage and storage charges, and by proper handling of out-of-town terminal problems, such as the issuing of complete and correct instructions for cartage, switching, unloading, inspection, designating the right piers for loading (in foreign shipments), and so on.

In few other departments of business are the activities to be controlled by management more numerous or more complex than in a full-fledged traffic department.

Analysis of the Functions of Traffic Management. Any complete analysis and explanation of all the functions and activities of a modern traffic department in a large business would cover many pages. We do not need such a complete analysis for our purpose. We do, however, need a summary of the more important functions of this department of business and some idea of the relative importance of these functions. This summary will be found at the end of this executive manual.

You will see, when you come to this summary, that provision of the best possible traffic service in any business is a problem with many ramifications; that the modern traffic manager has, in addition to those duties which require purely technical information, all the usual responsibilities in managing any important department, involving the application of all the fundamental principles of profitable management presented thruout this course in business management.

The traffic manager, like the head of any other department of business, must have efficient departmental organization and operation, including the selection and training of good assistants and clerks, providing the right office equipment, and supervising the handling of all the myriad details of the office. In fact, a traffic manager needs to be a close and extensive student of efficient business management in general, as does the manager of any other department.

THE PLACE OF MOTOR TRUCKS IN TRAFFIC MANAGEMENT

Our view of the problems of traffic management would be incomplete without some special consideration of the growing importance of motor trucks as a means of transportation. The possible uses of motor trucks are numerous, and the problem of getting the greatest service at the least cost from their use is primarily a traffic manager's responsibility; for the fundamental function of a traffic manager is that of economically providing his company with the best possible transportation for all incoming and outgoing shipments. Therein is another general principle of profitable management that should be noted:

> **Efficient organization of management requires a division of executive work which groups together in one department under one head all activities which coöperate directly in gaining one of the several basic objectives of the business.**

The decision in doubtful cases—that is, in cases where there is some doubt as to which of two or more departments shall include a certain activity; whether, for example, the responsibility for the most advantageous use of motor trucks in the business shall be centered under the control of the man in charge of production or the traffic manager—is made by answering the question, Which department is best qualified to carry out the responsibility efficiently? and that is not always an easy question to answer.

But, as applied to the use of motor trucks—how and when they shall be used—the traffic manager can usually direct this means of transportation to best advantage, and he has a chance here to cut costs of transportation in various ways and to guard against waste motion.

Practical direction of the profitable use of motor trucks includes decisions upon—

1. The uses to which they will be put.
2. How they can be made to serve these uses best at least cost, including primarily, decisions upon such matters as the number of motor trucks to have, their routing, delivery schedules, and so on.

Various Uses of Motor Trucks. To-day, the ways in which motor trucks can be profitably used in many lines of business are numerous, and new uses are constantly being made of them—on the farms as well as in industry, and on the highways between cities as well as in local town deliveries. The variety of the types of motor vehicles now manufactured permits very close adaptation of type to use.

The use of motor trucks often permits a manufacturer to carry his products from the factory to concentration points where his products may be assembled into carload lots. Motor trucks are often a substitute for spur lines. They are especially desirable in hauling perishable commodities that are wanted in a hurry, before they could be delivered by freight.

The short haul may mean 5 miles or less, or it may be 100 miles or more, depending upon many condi-

tions, but, of course, motor trucks are primarily short-haul vehicles.

From many of the larger urban centers motor-truck routes radiate in many directions. The load usually originates in the larger city, and the return load becomes a serious problem for the traffic manager. By getting in touch with all return-load possibilities within a 10 or 20 mile radius of the point of destination, however, including the hauling of household goods in some cases, motor trucks can usually be made to pay more than the cost of their return trip. This is nearly always the case when the route is between two cities of any size.

Railroad freight may move both ways between the two cities, yet the traffic manager may find that it pays to use the motor truck when railroad freight rates between the two cities are not low enough to make up for the cost of transferring the freight from shipper to freight house and from the freight house at destination to the consignee. The cost of special packing sometimes required in railroad shipments, the losses from theft, the possible delays by embargoes, and so on, also often make the motor truck more desirable.

In decisions on the use of motor trucks where railroad transportation is also available, all the costs of one means of shipment must be weighed against all the costs of the other means, including consideration of the value of time saved and risks incurred.

How Technical Knowledge Saved Thousands. In concluding this part of our study of the principles of profitable management, let us take a case in railroad shipping which brings out the importance of the application of just one of the many technical matters which a traffic manager has to understand, for profitable management lies in APPLYING what we know, no matter what managerial responsibilities we may have to assume from day to day.

This is the experience of one LaSalle student who, at the time, was taking the special training course in traffic management. For a good many years, this young man was a shipping clerk in the Bureau of Standards, a branch of the Department of Commerce, in Washington. There he had absorbed a good deal of practical information about rates; but until he had followed an organized training course in this line he did not know the principles behind the traffic rules. One principle learned in his training course was this:

> **The use to which an article is put does not determine the rate to be accorded; but it is what the article actually is that counts, not its use at point of destination.**

One day he saw a freight bill for $3,927, covering a carload of light-house buoys shipped from Seattle, Wash., to Atlanta, Ga. He investigated and found out that an inspector had been sent out to buy a particular kind of log to be made into buoys. This inspector called these logs "light-house buoys" when he made out the bill of lading. That was their name. Our student of traffic management, however, knew that for transportation purposes they were simply logs. He forthwith secured affidavits from the inspector and receiving agents to the effect that this shipment was actually logs, and the railroads had to refund $3,759 with accrued interest, for the freight charges on logs totaled $168, against nearly $4,000 on the same weight of light-house buoys.

The ability necessary to secure changes in rates or classifications, with all the economic, business, and traffic knowledge involved, as well as knowledge of interstate commerce law, emphasizes the extent of qualifications required in a modern traffic manager. Managing traffic is a highly specialized function, requiring a great amount of special technical knowledge, as well as general acquaintance with the fundamental principles of business management. Furthermore, there is no prospect for any lessening of the ramifications of the work of the traffic department. This department is destined to become a more and more important function in business management.

Altho we may not be directly engaged in traffic work of any kind, we should remember the essential features of traffic management as presented in preceding pages, in order to be able to get better coöperation from and to give better coöperation to this department of business.

Let us now consider the following summary of the functions of traffic management:

A SURVEY OF TRAFFIC MANAGEMENT

In some large concerns with heavy incoming and outgoing shipments, such as the International Harvester Company, the General Electric Company, or Swift & Company with its traffic department of 100 people, and so on, traffic management includes all of the following duties. Altho only certain large concerns have a traffic department that includes all these duties, it is well for every manager to understand the complete ramifications of this department of business by reference to this list of duties, which was prepared by the LaSalle Department of Traffic Management.

Among the duties which traffic management may be required to perform are the following:

1. **Assist in locating the firm and its branches from traffic standpoint**—especially where traffic conditions are important.
2. **Organize the traffic department and coördinate all its activities.**—(See Personnel Organization Analysis following this analysis of duties.)
3. **Secure the best transportation service.**
4. **Appear and practice before Interstate Commerce Commission, classification commissions, and railway freight traffic bureaus and associations.**
5. **Provide office with proper equipment.**
6. **Supervise office personnel,** including the selection, training, encouragement, delegation of duties to and retention

of, the staff; also the laying down of policies and procedure.

7. **Handle office management and communication.**
8. **Secure maximum passenger service,** including transportation of employes to and from plant, routing salesmen and officials, booking passage, and auditing passenger expense bills.
9. **Oversee departmental accounting and statistical work.** Forms, keeping records of costs, routes, rates, cars, storage, etc.; also prepare rate exhibits and charts for hearings; comparisons and analyses of rates and costs.
10. **Handle rates, tariffs, and their structures.** Build up and maintain tariff file; study, check, analyze, correct, and quote rates; revise and audit freight bills; keep abreast of competitors with respect to their rates, charges, territories, and privileges.
11. **Supervise billing, routing, and documentation procedure.** This supervision aims at the making of intelligent traffic contracts; at proper description, classification, and rating of commodities; at selection of proper agency and then of the proper carrier, to save time, money, damage, and congestion.
12. **Solve transit problems.** Tracing, expediting, diversions, reconsignments, transit privileges, embargoes, refrigeration, and other factors affecting the shipment while en route.
13. **Handle out-of-town terminal problems,** and furnish detailed and explicit instructions well in advance, covering inspection, weighing, analysis, switching, cartage, lighterage, storage, loading, unloading, demurrage, dunnage, car seal, and shortage.
14. **Prosecute transportation claims**—detect, prove worth of, prepare, present, file, follow up, and collect just and reasonable loss, damage, and overcharge claims.
15. **Handle express and parcel post business**—know the facts concerning express and parcel post routes, rates, documents, insurance, packing, claims, and services; advantages of both; which to use.
16. **Handle foreign shipments**—understand overseas shipping office problems, foreign trade documents, freight forms, customhouse brokerage, steamship and lighterage rates and routes of service.

17. **Provide suitable industrial handling, transportation, and communication equipment** — ownership, management, operation, and service problems connected with private cars, floating equipment, docks, sidings, cranes, scales, motor trucks, telephone, telegraph, and radio service.
18. **Manage and coördinate work of outside employes**—assign duties and supervise all packers, craters, carpenters, drivers, etc.
19. **Supervise outside transportation service**—lighterage, switching, and cartage; materials; methods; advantages of various agencies.
20. **Organize and manage shipping department**—supervise the shipping room (handling outbound goods); pack, weigh, mark and load goods; dictate specifications for shipping containers so as to reduce weights, measures, damage, theft, loss, shocks, claims, and errors in these matters.
21. **Organize and manage receiving department**—supervise the receiving room (handling inbound goods); unload, unpack, and distribute goods.
22. **Manage local transportation—cartage and motor truck fleet, switching, and lighterage**—know the best types of vehicles to own; supervise drivers and their routing to avoid loss of time; time records; pick-up and delivery procedure; lighterage; loading and unloading.
23. **Warehousing and plant transportation**—storage, dunnage, distributing warehouses; consolidation cars; pool cars; handling material within the plant; knitting the machines together.
24. **Keep advised of the operating and management methods of the import house**—process followed by, and problems of the purchase, sales, accounting, advertising, finance, legal, executive, stock, and stores departments.
25. **Know and keep informed concerning general traffic, legal and commercial business changes**—commercial and traffic geography; business conditions; trade customs; firm's products; legal and I. C. C. opinions; transportation acts, decisions, and conference rulings; know carriers' obligations and shippers' responsibility.
26. **Coöperate with others.**

ANALYSIS OF PERSONNEL IN LARGE TRAFFIC DEPARTMENT

The numerals after each executive title below refer to the foregoing analysis of duties. Each executive is primarily and directly responsible for the duties indicated by the numbers that appear after his title.

Traffic Manager 1, 2, 3, 4, 24, 25, 26.

Assistant Traffic Manager (Inside Work) 5, 6, 7.
  Office manager 7, 8.
  Chief of rate bureau and tariff bureau 10.
  Accountant and statistician 9.
  Express and parcel post 15.
  Billing and routing documents manager 11.
  Chief of claims bureau 14.
  Foreign shipping manager 16.
  Terminal and transit service manager 12, 13.

Assistant Traffic Manager (Outside Work) 17, 18, 19.
  Shipping department superintendent 20.
  Local transportation superintendent 22.
  Receiving department superintendent 21.
  Plant transportation and warehouse superintendent 23.

* * * * * *

Now, before going on with Executive Manual 6, which surveys the major problems and the basic principles applied in attaining low-cost production and purchasing, clinch your grasp of the principles presented in preceding pages by using the following check-up on principles, and by working out Executive Problem 5. This will add greatly to your ability in solving practical business problems by applying sound business principles.

CHECK-UP ON PRINCIPLES

Use the following check-up to get the principles of this manual firmly fixed in mind. This will help you to handle the problem which follows. This check-up is entirely for your own personal use, so you need not send it in to the University.

	Check	
	Yes	No
One sales manager contended that each man who sold a typewriter should know it so well that he could repair a machine no matter what was wrong. A second sales manager took the position that the salesman must rather know the uses of a typewriter, and need know only enough of its construction to describe it and use it intelligently. Was the second sales manager right?		
A manufacturer of typewriters whose sales were just about sufficient to keep his plant busy to capacity decided upon a determined effort to increase sales by 50 per cent during the ensuing year. If necessary, he would spare no expense in forcing sales to the point determined upon. Was this a sound decision?		
If a large newspaper wants a new circulation manager, should it consider only men who have been successful newsboys?		
In discussing the choice of a new sales manager, the vice president of a very large company that makes enamelware cooking utensils maintained that, above all else, the new sales manager must be a wonderful salesman. Was he right?		
The president of a new food product concern congratulated his sales manager upon his success in getting 2,000 retail grocers to stock the new product. Was this sufficient grounds for congratulation?		
A men's clothing manufacturer decided to double the capacity of his plant and to increase production 100 per cent as soon as possible. "If they are made, they can be sold," was his argument. Was he right?		
If the minimum carload on pneumatic tools from Philadelphia to Cadillac, Mich., is 24,000 pounds, and the rate $0.68 per cwt., should a shipment of 12,000 pounds be sent as a carload lot if the less-than-carload rate is $1.30 per cwt.?		

	Check	
	Yes	No
Is the car load more likely to deliver the lot without loss from pilferage or misplaced or missent goods?		
The superintendent for a contracting firm shipped a carload of equipment from a job in Guthrie, Tenn., via Cincinnati, to Fort Wayne, Ind., where the company needed it badly. The papers were full of reports of floods on the upper Ohio, and he suggested this as an excuse when the Fort Wayne office complained that the car had not arrived and insisted that he should have shipped via Evansville, notwithstanding greater cost. Was the Fort Wayne office right?		
The traffic manager for a furniture company suggested important savings in freight on certain tables if they were shipped K. D. (knocked down, or not completely assembled). The sales manager reported that the customers would have to spend at least that much to assemble the tables and they might deduct this from the price. Can this be decided without further information?		
A Denver jobber bought two carloads of surplus gas masks, just after the War, to sell as a "special" in the toy department. He shipped them West as "children's toys" at a low freight rate. The railroad insisted that they were really "artificial respirators," and charged him accordingly. Was the railroad right?		

Executive Problem 5

ADOPTING A SALES POLICY

Solving Problems in Sales Management
Under The LaSalle Problem Method

* * *

THE experience you will get in applying the principles of business management involved in this executive problem will give you increased confidence in your knowledge and a greater assurance in your ability to handle situations that may arise in your own business relations.

Prepared by the Research and Consultation Staff of LaSalle Extension University from an interesting problem which it has carefully investigated and analyzed.

YOUR STUDY PROCEDURE

When you have carefully read and studied the Executive Manual and have used the Check-Up on Principles to secure a better grasp on principles, you are ready for the final step.

Tho it will take you only a short time, relatively, to take your final step, a very great personal benefit awaits your reading and handling of the executive problem.

What is true of this problem is true of all of them. You read a Statement of Facts, observe what are the more important facts, analyze these facts to get at the heart of the situation, reach a decision regarding the best thing to do, reach judgment, and act accordingly.

The facts as presented are representative of what executives face. They have been especially selected because they present a practical business situation which is comprehensive and makes it possible for you to apply practically every fundamental principle presented in the manual. You will employ your powers of analysis in the manner and form that is characteristic of successful executive analysis and will decide and act as executives do.

When you have carefully digested the Statement of Facts in the problem, you are ready to take up your Working Papers. These Working Papers are developed in the form which corresponds closely to that in which a real executive gets his facts together, thinks them over, decides upon them, and initiates whatever action is necessary. You will be able to reach your decision with very little writing, for a premium in business, as well as in this plan of training, is placed upon headwork rather than upon penmanship.

When you have completed your Working Papers, send them to the Business Management Instruction Staff, who will give them careful, individual, and personal attention.

Executive Problem 5

ADOPTING A SALES POLICY

Meet George Sayles, the Los Angeles district representative of the Radiotone Company, of St. Louis.

You will soon be asked to step into Mr. Sayles' place, make an important decision, and write a report for him. He is to have a chance to help in determining the sales policy of his company. You will appreciate, therefore, what a valuable experience is about to be yours, since the success of almost every enterprise depends in part on a sound sales policy.

The other day Mr. Sayles received a wire from his sales manager, Mr. Henderson. It read, "Saturday's mail brings you very important letter. Mail answer Monday." This telegram thoroly aroused Mr. Sayles' interest. The Saturday mail brought him a rather bulky envelope from the home office. You can imagine with what eagerness he perused its contents. He found first a letter from Mr. Henderson which read:

My dear George:

The general letter which is attached is going to each of our fourteen district representatives. I want you to give it your best thought. I may explain that at headquarters here there are some who doubt the wisdom of my plan. I, of course, believe that it is the wisest thing we can do, yet I value very highly the opinion of you men in the field with regard to it. So do our other officials. Be absolutely frank, therefore, in your comments. If you approve of the plan I've suggested, your approval will help me in selling the other executives on it. If you disapprove, and give good reasons why, it will influence me in dropping it.

In studying this proposition, George, I think you'll find help if you'll review some of the principles you learned in your study of business management. We want you to give reasons for your opinions. So you should think the matter over and follow these principles as you decide.

It's needless to say that we want you and all the other district representatives to keep this plan to yourselves. I would not dare ask your advice were I not certain that I could trust you in this implicitly.

To this letter was attached the following.

THE STATEMENT OF FACTS

To Our Field Representatives:

We are asking each one of you to express yourselves on the advantages of two plans which we are considering for our future sales. Plan A is a new plan of distributing our goods which is suggested by Mr. Henderson, the sales manager. The Plan B involves merely the continuation and extension of our present plan of distributing thru jobbers.

As you know, we have recently decided to extend our line. We have thus far been confining ourselves almost entirely to the manufacture and sale of our Radiotone loud speaker. Our figures show that we are doing about 25 per cent of the loud-speaker business of the country. These loud speakers are sold to everyone, and particularly to amateurs who buy parts and make up their own sets.

We have distributed this product entirely thru the jobbers, giving them 50 per cent off list, and they have in turn sold the line to dealers and small manufacturers at various discounts, but in no case for more than 40 per cent off list. You fourteen men have been our sole contact between our company and the outside world, and we have only a vague idea as to the number of dealers who are actually distributing this loud speaker to the users.

In the last year it has become increasingly evident that the sales of radio apparatus will in the future be made on a somewhat different basis. In the first place, the sales of the past have been made largely to men and boys who wanted to experiment with their apparatus. They bought the apparatus in order to "play with it" more than for the sake of the use they would get from it.

In the second place, a goodly proportion of the people who are already interested in radio have purchased. There are, however, very large numbers of possible prospects who can be sold by the right selling methods. It will take more salesmanship to sell radio in the future than it has in the past.

For these and other reasons, we have decided to offer the public a complete radio receiving outfit in which we will include the Radiotone loud speaker. Now the question is, whether we should sell this complete Radiotone receiver thru the jobbers, as we have so successfully been selling Radiotone loud speakers in the past, or whether we should build up an organization of dealers of our own. Mr. Henderson recommends the latter plan. Many other officials do not agree with him. You, from your wide experience in the field, have valuable advice to give us. We want you to give that advice very frankly.

Under the present plan, which we will call plan B, we would require few if any additions to our present sales force made up of you fourteen sales representatives. We would continue to advertise our receiver sets extensively, so as to arouse demand for them. We have attractive sales material which we would be glad to furnish any dealer, and which we would also mail to such prospective users as wrote us for it.

We would sell the equipment only to jobbers whom you would select. When they ordered in large lots we would pay the freight, and we would co-operate in arranging for carload shipments to groups of jobbers. The jobbers will continue to receive a discount of 50 per cent off list.

Mr. Henderson's plan, which we will call plan A, is quite radically different. He plans to have our own salesmen call directly on the dealers. He estimates that some 4,000 dealers will cover the entire country, and plans to have only one authorized dealer in each neighborhood. That means that in the large cities there will, of course, be several dealers, but that in the smaller towns there will be but one man to get our exclusive agency agreement.

These men are to receive 40 per cent off list. They are to agree that they will sell no radio equipment which competes with ours, altho they may sell parts, accessories, and even the smaller sets, which we do not at present manufacture.

We propose to help the dealers sell the goods to the user by advertising, just as was mentioned under plan B, and also by showing the dealer how he can best sell the goods.

This plan will require that we establish some fourteen district warehouses in the different trade centers, and that we put a traffic man in charge of each, so as to insure our dealers the same prompt service as they now get from the jobber.

This new plan A also means a great increase in our sales force. A responsible man will be put in charge of the sales force in each trade district. Our present field representatives will, of course, get first consideration for those positions. These salesmen will call direct on the dealers, and will be expected to help them in every way to sell just as many sets as possible.

Some of the advantages of Plan A are that we can control the selection of our dealers, and that we can work with them directly to make them more enthusiastic about selling our goods. While our contract will require that they sell no competing line, we believe we can persuade them that our line is at least as good as any, and that our help in selling will make it worth while to co-operate with us.

On the other hand, the plan means a very radical change in our present selling methods. While we know that our present method will succeed with the men who are now handling our goods, we cannot tell how well these men will be able to carry out the new plan. Furthermore, as soon as the new plan is introduced, all the jobbers will feel that we have taken a step which is against their interests, and will not only refuse to co-operate, but will in many cases "knock" us and our line.

We should have said before that the two plans are estimated to yield the same profit for a given volume of business. While under Plan A we would sell at 40 per cent off list instead of 50 per cent off list--which is an increase of 20 per cent over the net selling price we are now receiving--the additional cost of a larger sales force, of the warehouses, of the selling helps for the dealers, and the added credit losses will absorb the 20 per cent, it is estimated.

You men in the field need not be told that we are faced by an entirely different problem from that which would face a manufacturer of some new line. We already have valuable jobber connections, and are getting a very satisfactory volume of business thru them. The proposed change is certain to disturb these connections.

On the other hand, conditions of the trade are changing. The new plan puts us into more immediate control of the entire distributing policy. If our estimates are correct, the greater selling expense is exactly offset by the higher selling price.

This is a brief outline of a situation which confronts us on which a decision must be reached immediately. We want to ask each one of you men, therefore, to give this matter very careful and immediate consideration, and to write us which of these two plans you believe we should adopt as our policy, and give us also such suggestions as you can regarding the steps which should be followed.

Attached to these papers was a third document, which you will find as part of your working papers.

Mr. Sayles was frowning as he finished his first careful reading. At first he resisted the idea of a change in methods. That's true of almost all of us. We do hate to change well-established habits. At the same time, he realized that under the new plan he would have a chance to become the head of a considerable force of salesmen. He felt that this was work which he could handle. He had always been able to lead his associates.

He saw in this plan, also, the enthusiasm of a manager, Mr. Henderson, to whom he was intensely loyal, and whom he had learned to respect. Nevertheless, and most important, he realized that all these personal preferences and loyalties must be put aside as he studied this plan, and that he must recommend the policy which would prove most successful, regardless of whether it meant that he personally would gain or lose by it.

Now you are to take the part of George Sayles. You are to read these letters again and, with the help of the principles you learned in Executive Manual 5, are to give your best judgment on the questions which were asked him in the questionnaire which you will find in the working paper for Executive Problem 5.

BUSINESS MANAGEMENT

SECURING LOW-COST PRODUCTION—Being Executive Manual 6, on The Principles of Profitable Management, in a Complete Plan of Training and Service for Executive Work.

Investigated, organized, and presented by the research, consultation, and editorial staffs of LaSalle Extension University

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the advice and co-operation of

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SECURING LOW-COST PRODUCTION

Part I

Basic Problems in Production

MANY of the basic principles applied in attaining low-cost factory production also apply in planning and directing production in an office or a store.

An office manager found that too many errors were being made by his card filers. As each misplaced card was hard to find and might cause considerable loss of business, he devised a check on the accuracy of this work by dividing his filing clerks into two groups. The first group located the correct positions of the cards in the filing drawers, and placed the cards temporarily in those positions, endwise. The second group checked the accuracy of the positions and then placed the cards in their normal position, lengthwise. Errors were practically eliminated.

Thus this office manager applied a basic principle of factory production—that of subdividing labor along job lines. He had learned this principle in a study of production as applied in factories.

Every department of business and every kind of business, whether it be a sales organization, a retail store, or a bond house, as well as a manufacturing plant, has a production problem, whether physical goods are produced or intangible services. And in every case—

> **The prime objective of production is to secure the best volume of output of the right quality of goods or services at the lowest possible cost.**

Naturally, the basic principles of successful production management have been developed and applied most extensively in manufacturing industries.

There are certain basic problems of production that need to be solved at the start of a business. Few of them, however, can be settled once and never considered thereafter. For example, adaptation of the design of a product to meet changes in demand makes of design a problem that cannot be solved once for all time. Again, adjustment of production schedules to changes in sales volume makes a more or less continual problem of determining the quantities to be produced from time to time.

Sometimes, also, the addition of a new product alters production on old products. One company started as a manufacturer of adding machines. Later on it began to make a well-known metal pencil, and the business on this new product soon outgrew the adding-machine business, until finally the adding-machine end of the business was dropped. Obviously, many of the policies and plans settled upon in the early days, when this concern was making adding machines, were not applicable in making metal pencils. There were constant alterations of the plans as the weight of importance gradually shifted from one product to the other.

Location and the Source-Remedy Principle. One of the most important of the early problems of any business is that of choosing the best available location for the business. This problem should be carefully solved before operation of the business is started. Having the right location for a business has a good deal to do, in many cases, with the earning of satisfactory net profits.

The New England shoe manufacturer who, for sentimental reasons, built his factory on the site of his father's farm on the outskirts of a manufacturing city, paid dearly for indulging his sentiment. He was penalized continually because he would not change his location, as he easily could have done, and thereby do away with traffic troubles at the source of those troubles. It is a principle of profitable management that—

An economy or a remedy should be applied as nearly as possible at the real source or cause of waste or trouble.

The source of trouble may lie in the size or shape of the plant, the housing available to the families of employes, layout in the plant, wasteful inside transportation systems, or in having machinery that is too greatly limited as to output, and so on. There are many possible sources of waste and trouble. The practical point to remember is that, whatever is the nature of the waste or trouble, corrective action should strike as near as possible at the source of that waste or trouble.

That is a principle of universal application in management, not only in production. The sales manager who battled loyally to sell a certain farm power machine to do a definite kind of work to which the machine was not well adapted, should have battled his production and engineering departments for changes in design which would, tho expensive, have enabled the machine to do the work well; it thereby would have had the unqualified approval of farmers, and would have saved this business from failure.

Working Conditions Need Early Consideration. Certainly the provision of healthful, cheerful, and safe working conditions is a basic problem. Good lighting and ventilation and safe exits, for instance, cannot be supplied as an afterthought, except in a makeshift manner and at greater expense. As elsewhere, foresight is the requirement.

Management must, so far as possible, foresee the essential requirements of efficient production and provide them in advance.

Safe, healthful working conditions justify themselves, not on the grounds of humanitarianism alone, so much as by the fact that "it pays."

A time study—that is, an observation and a time record of a workman's separate movements on his job—was being made upon a grinding operation. The man doing the grinding worked under the edge of a balcony upon which bolts and nuts were stored. It was observed during the study that the man frequently paused to look up, delaying the job. Questioning brought out the fact that this man had recently been hit by a heavy bolt which had rolled from the edge of the floor above. That was why this man was nervously on the lookout whenever anyone went up to this storage balcony. A strip of board nailed to the edge of the balcony was the remedy.

Provision of safe working conditions always pays, but it pays longer and more when embodied in the original (or the remodeled) plans of any store or factory. Well-managed concerns always provide for safety and health in their plans for a new building or office.

Planning Ahead Saves Much Later On. Most manufacturing plants start as a single small building. Some of them have added an ell here, a wing there, and so on until a sort of crazy-quilt building is the final result. A haphazard building of this kind is usually a source of serious losses, which could have been avoided by providing for future growth in the original plans.

> **Even tho little capital for building is available at the start, a building plan that anticipates future requirements should be made at the start.**

When a new plant is put up, a complete study of the probable future needs of the business must be made and considered. Such a study must not be superficial. It must cover thoroly the handling of raw materials, the process of manufacture, the machines and equipment needed, the power requirements, the land available, and even the personnel of the business. Advance planning is done by those who look ahead and know the importance of anticipating future requirements. Having the right plan of building—knowing just where the next building (or office space) is to be added—like the right location, is a matter of great relative importance; and—

The efficient executive accurately estimates the relative importance of the various activities he controls.

That is a principle of universal application in profitable management. It applies in all work. One of the important reasons for this preliminary survey of management problems and principles, in fact, is to develop ability to distinguish the relative importance of various business activities.

Foresight in the building plan anticipates—

1. **Changes of population.**
2. **Local development.**
3. **Changes in volume of sales.**
4. **Space, equipment, and supplies needed.**
5. **Availability of building and transportation facilities.**

Providing a Proper Layout for Equipment. Basic problems relating to machinery and equipment are—

1. Getting the proper equipment for the job in the first place.
2. Arranging it so that it can be used to the best advantage.

It is not the purpose, in this preliminary survey of production problems, to go into detail by telling you, for example, how to avoid "back-tracking" due to poor layout of machinery. Later on, a major division of this course is devoted to production principles and problems. Here, as elsewhere in the first eight of our 100 executive manuals, our aim is to get acquainted with some of the important problems of management and the principles that are applied in solving them.

One factory manager employed the idea that all movements of materials and parts were traveling around his plant in a taxicab. He tried to impress his assistants with the importance of economy by presenting the idea that taximeters were attached to the movement of pieces and parts, and that every bit of wasted "mileage" was just so much wasted money. The underlying principle, which applies everywhere in business, was—

> **Concrete pictures of ideas enable workers more readily to see and understand, and therefore to achieve, the objectives of profitable management.**

The mental picture of the taxicab impressed the importance of avoiding waste movements of materials and parts.

The elimination of waste motion by proper layout can generally be combined with the saving of floor space—a worth-while consideration, particularly in crowded plants and where rental is high. Also, of course, unused space is expensive, no matter how little the actual rental. Manufacturing inefficiencies crop up in many places where there is lavish use of space. Using less space would often promote labor efficiency. Take the approved "head-to-foot" arrangement of screw machines—they dovetail to save space, and the operator between two machines can attend both with the fewest steps. Just enough space—not too much or too little—is the problem.

> **Management must always guard against the common human weakness of ''overdoing a good thing.''**

This principle applies in all management; in fact, it applies in all of life's activities. It is very easy to make the mistake of overemphasizing the importance of one policy of management, for instance, and in so doing give less than the due amount of attention to other policies, perhaps because the manager has been less directly involved in creating or developing some of the other policies. This also involves application of the principle of weighing the relative importance of various activities. The importance of every suggestion and policy and activity must be impartially weighed, regardless of the source of origin of that suggestion, policy, or activity.

Layout by Product or by Process. Will you arrange your layout by product or by process? Some concerns gather into one department all machines that do one type of work and route material for processing on these machines to that department, as when all punch-press work is performed in one department. This is called "departmental line-up." Other concerns lay out their plants and arrange their equipment on the "self-contained-unit" policy, by which a certain part is built from start to finish in a given department, and then routed for partial or final assembly. Naturally, the policy adopted varies with differing conditions.

The principle involved applies to the management of any department as well as to factory management. Any department of a business, in fact, may either operate on a "self-contained-unit" plan—doing everything for itself without recourse to the other departments—or it may have some of its necessary work delegated to special departments, as when all stenographic work is done in one central location.

How decide which plan is better? The answer to this question requires application of this principle:

> **Any activity in a business should be performed in the department where it can be most efficiently handled—that is, handled with dispatch and with satisfactory quality of performance—satisfactory to customers, other departments, and special management requirements—and at the least expense.**

In a shop where nearly all the parts of the product are manufactured steadily, month in and month out, as in the production of sewing-machines, the departmental line-up of equipment mentioned above is usually advisable. In a shop that manufactures the same general type of product, but does it to special order, called a jobbing shop, the self-contained-unit arrangement is generally preferred, as in the case of machine repair shops or in custom tailor shops.

In view of the foregoing principle, however, it is also possible that one plant should have both departmental and self-contained-unit line-ups. One gear manufacturer, for example, groups the gear-cutting machinery together, the drill presses in another department, and so on; yet in the same plant, self-contained-unit line-ups are also used for manufacturing certain parts which do not vary.

The Problem of the Quality and Quantity of Equipment. Obtaining modern machinery and equipment is an important problem of production. Getting the right equipment in the first place represents a saving at a common source of waste. But this is also a day-to-day problem, for equipment that is best to-day may not be best to-morrow. Yet when well selected in the first place, much of equipment can be used longer before it becomes obsolete.

Select the best available manufacturing equipment at the start. Then keep it "best" all the time, even tho this policy may require the junking of some equipment that is not worn out—if, in the long run, it will pay to junk "good" equipment and replace it with better equipment. The general principle of profitable management here involved is—

> **Efficient management should never let a relatively small loss on any contemplated change prevent action that will lead to a gain which much more than makes up for the ''loss.''**

In other words, don't be "penny-wise and pound-foolish."

The right quantity of equipment is about as important as having the right kind of equipment, for we want to be able to utilize all machines and equipment in continuous full-capacity operation in so far as this can be done.

Equipment is a problem in every business. In a retail store, a merchant's choice of equipment is based upon consideration of the character of the trade he wants to attract, whether it is primarily trade that buys almost solely upon a price basis or trade that is well to do, or both kinds. He also gives consideration to proper protection of various kinds of merchandise, to proper display, and the like.

Always, the question of equipment is one that requires scientific analysis of specific requirements in finding the right answer.

Engineering the Product. Another important problem of production is the designing and making of tools, jigs, drawings, and designs and specifications of new products and of improvements in old products—work that is usually done in the engineering department.

The decisions of the engineering department affect so many branches of manufacturing that it is well to have a means of keeping in constant touch with these decisions. If not, a concern may find itself in the predicament of one company which bought $100,000 worth of machine tools without consulting the engineering department, only to find out, shortly, that changes in design were contemplated which made many of these new machine tools useless.

Whether to Make or Buy Parts. Whether to make or to buy certain parts which go into a product is a question of manufacturing policy that should be answered at as early a date as possible.

As we know, many manufacturers make products used as parts in the products of other companies because the latter would find it unprofitable to install the necessary equipment and organization to make the parts for themselves. Pressed-steel parts, stampings, and screw-machine products are examples.

The volume of output of a product may be large enough to justify the manufacturer in installing equipment for making nearly all special parts of his product, as in the case of at least one well-known automobile manufacturer. The quantity of the special part used by a manufacturer in relation to the quantity which can be made efficiently influences his decision.

Few automobile manufacturers would think of manufacturing glass wind shields. All of this part of an automobile that could be used in nearly every case would be only a small fraction of what the smallest commercial glass factory could make. But when it comes to gears, for example, there are many cases where it pays the automobile manufacturer to make them. The principle to apply in deciding whether to buy or make is this:

> **Cost (of all kinds) and quality of a part made inside the plant as compared with costs and quality of the part purchased outside controls the decision on whether to make or to buy a special part.**

If any part of a product requires expensive special equipment or exhaustive engineering research, it is generally bought from an outside manufacturer who can spread the initial cost of equipment and the research charges over a larger quantity of production—as in the case of incandescent lamps. No manufacturer of automobile headlights could profitably make his own lamp bulbs, unless he chose also to supply other manufacturers of headlights and really go into the manufacture of incandescent bulbs as a separate business.

The problem of whether to make or buy parts, like most important problems in business, cannot be answered apart from considerations which involve more than one department of business. One consideration is ability to finance the manufacturer of the part, as explained in Executive Manual 7. And the attention that the executives must give to the extra work its manufacture involves, may interfere with their other work.

THE PRINCIPLE OF BALANCED PRODUCTION

Such are just a few of the problems with which production management is concerned. The aim of this department is to produce the right quality of product in the right quantities at the right time and at the least possible cost.

Our preliminary survey of production problems, however, would be inadequate unless we also considered some of the strictly day-to-day problems. But before we go on with day-to-day problems in Part II, let us consider one other basic problem, which involves application of the principle of balanced production.

> **Production should be so organized and directed as to maintain the continuous operation of every part of the productive process at full capacity.**

As stated, this principle does not mention balance; but a little thinking about it will show that it implies a finely adjusted balance of the quantities produced in all the various operations with the amounts required in maintaining a continuous flow of finished products—without shortages of some parts here or oversupplies of other parts there, and without having some machines idle at times and overworked at other times.

In accomplishing well-balanced production, output from day to day or from week to week must be a fixed quantity of the size that best permits this kind of balance. It has been found in the manufacture of undergarments, for example, that approximately 600 dozen a day is a satisfactory quantity for a single manufacturing unit to make in order to gain balance in the use of all the necessary equipment in this line. By doubling all the equipment, the same balance in using the equipment could be gained by making 1,200 dozen a day.

But in doubling the quantity produced it would be necessary to guard against inefficiency coming as a result of too great a demand on the supervision of the executive staff. Does or does not the larger output give an additional gain thru lower overhead per unit of product? The answer to this question would determine whether 600 or 1,200 dozen a day could be made in one factory at a lower cost per unit of product.

This principle of balanced production thus involves the problem of determining the best size of a plant, bearing in mind the law of diminishing returns, explained in our study of economic fundamentals. The general rule on this is to have that size of manufacturing unit which gives the best opportunity to apply the principle of balanced production. The best size varies with different lines and with different organizations, and is to be determined largely by experience in each case.

Adjustments in equipment which help gain this balance at any established rate or daily volume of production constitute one of the most fundamental problems in securing low-cost production.

Now let us, in Part II, get an understanding of some of the day-to-day problems of production. Many of them arise as a result of the necessity of maintaining well-balanced operations.

SECURING LOW-COST PRODUCTION

Part II

DAY-TO-DAY PROBLEMS OF PRODUCTION

DAY-TO-DAY problems of production cover such matters as planning the work (involving the full utilization of equipment and of labor), research (including time and motion study), the further development and application of production policies, filling in of slack periods, providing wage incentives, and so on down thru a maze of less important detail. Our present purpose will be served by considering a few of the more important of the day-to-day phases of production.

THE DAILY PROBLEM OF PRODUCTION PLANNING

First, let us consider planning the work.

The aim in planning is to keep the plant busy with a minimum investment in materials and in finished or partly finished goods and with maximum use of equipment.

In the case of manufacturing to fill specific or special orders for products, planning is the function of management which—

1. Makes sure that all parts of an order will be ready to ship on the date promised.
2. Sees to it that as little capital as possible is tied up in the goods in process of production.

Knowledge of how to make, how much, and when to make, enters into production planning. This function directs variations of production in accordance with variations in orders, or with variations in expected sales volume if the manufacturing is for stock and not to fill orders on the books.

Detailed Functions of Production Planning. Production planning also covers the issuance of orders and instructions to shop foremen and men, specifications of tool and machine requirements, and estimates of departmental time required for work on the product; also the outline of plans which reduce the amount of time spent in setting up and taking down machines, and so on.

Many concerns make this matter of machine set-up a problem for management to rule on in the form of a policy. For example, a manufacturer of garden hose has a definite policy that machine set-up on woven garden hose is not to be changed except at noon or at night, when these high-priced machines are idle. The right control of machine set-up is often an important item in securing low-cost production.

The general objective of planning day-to-day operation is an even and steady flow of work thru the shop.

The attainment of this objective lies in always having a job ready for each man or machine. In doing this, materials and tools must always be at hand—with no excess investment in them. A shoe factory found it advantageous to have patterns delivered to the cutters from a central pattern room. A traveling belt returns them to the pattern room as soon as the cutter has finished with them, thus making them quickly available for some other cutter and holding down the investment in patterns.

The steady flow of production may be broken by:

1. **Breakdowns of machinery.**
2. **Unstable labor conditions.**
3. **Inefficiency of labor or management.**
4. **Lack of co-operation.**
5. **Poor planning.**
6. **Inadequate organization.**
7. **Poor layout of machines and departments.**
8. **Lack of standardization in materials, equipment, method, and operations.**

Avoiding Rush Periods. Production planning aims to avoid rush periods. When the quantity of work coming thru is irregular, it is necessary to have enough men on hand to take care of the "peaks" and rush work, and there is at times some idleness between the rush periods. Good planning tries to avoid all idleness; it strives for a steady flow of work. Even the work of floor sweepers can be planned so that at a certain hour each day or week the same department will be cleaned; the sweepers can be kept busy all day with no alternating periods of frantic rush and idleness, as is sometimes found to be the case.

Some concerns that produce seasonal goods use export business to fill in the dull periods—as by selling in countries below the equator where the seasons are opposite. Another and more common method of combating slack seasons in production is that of manufacturing fill-in lines. But these added lines must be such as to require the use of practically the same machinery and other equipment used in producing the main line. Otherwise, except for keeping the personnel of the plant busy, the purpose is defeated, for idle equipment is one of the main evils of slack periods.

> **The less the variation in the rate of production from day to day and from season to season, the better the chance of attaining low-cost production.**

Some concerns avoid seasonal variations in the rate of output by accumulating and storing stocks of finished products. This requires more working capital. If finances are not very strong, and costs of production for stock and the carrying costs are relatively high, or if style or other seasonal changes in design cannot be definitely anticipated, it may be unwise to accumulate much stock. But it may be possible to make partial assemblies during slack periods—assemblies of the relatively inexpensive parts or of parts the design of which will not be changed. Or if a concern happens to manufacture both high and low

A Functional Analysis of Production Planning

I. *Planning Future Production,* by means of—

- (a) Master schedules which determine total production for a month or season according to probable sales.
- (b) Detail schedules which determine departmental production.
- (c) Temporary layouts which show the physical requirements for carrying out the schedules, such as materials, tools, designs, floor space, labor, and so on.
- (d) Budgeting which shows the costs and financial requirements for carrying out the schedules.

II. *Planning Current Production,* which includes—

- (a) Investigation of shop conditions, number of men at work, amounts of materials on hand and on order (using a perpetual inventory system), condition of tools and equipment, jobs in process, and so on.
- (b) Standardization of working operations and processes, also, standardization of materials, tools, equipment to be used, to avoid irregularities in time used to complete jobs and to insure uniform quality of parts and final product.
- (c) Layout and Assignment of Jobs—
  1. Routing—listing *where* each job is to be done, how it is to be done, and what materials and tools are to be used.
  2. Scheduling—listing *when* each job is to be started and finished.
  3. Dispatching—following up jobs thru the shop to see that they move from one work center (machine, bench, etc.) to the next without delay; also inspecting and reporting irregularities.

Above is an outline of the main functions in planning production, as generally followed in most large industries. Many smaller concerns, however, do not need an elaborate planning department, this function often being handled by one man, as by the superintendent or the general foreman. In medium-sized concerns, master scheduling and layout is usually done by shop committees, consisting of the foreman and various department heads. Planning is covered in detail in the major division of this course on Principles of Production.

cost lines, it may do as one toy manufacturer did—make the inexpensive line to stock during the dull season and largely confine its borrowing to financing the production of the expensive line during the rush season.

This stock problem is often affected by the degree to which simplification and standardization have been carried in a particular business. One company which makes paper-folding machinery has so simplified its line that a very few sizes and styles of machines with various attachments can do all the work that is demanded by the trade. One of several important advantages of simplification is the better opportunity it gives to manufacture for stock in dull times; it lessens the risk of making goods which are likely not to have a ready sale.

In the case of seasonal products, which ordinarily require a rush period at one or more times each year, it is a good general policy, whenever the nature of the product permits, to have smaller output capacity and keep going at full capacity all thru the year than to have large output capacity—large enough to take care of filling current orders during the rush periods—and then work at much less than capacity the rest of the year.

ESTABLISHING DEFINITE LABOR POLICIES

Assuming that seasonal dull periods cannot be avoided in a particular business, what then is the policy as to labor and hours?

Some concerns follow the plan of shortening the hours in order to retain as many employes as possible within the organization. And when the labor force must be cut, the cutting is done individually rather than "wholesale." That is, those who are dropped are selected as carefully as workers are added later on. Merit and efficiency govern; but the humanitarian principle plays a part in cutting the labor force.

Lack of definite labor policies cause wabbly management. One prominent executive came down to his office one day with an unusually radiant smile. He announced that he had finally settled upon a definite labor policy. He knew that thereby he had banished indecision and all the wavering which indecision entails. The fundamental principle involved is this:

> **Policies—fundamental general rules—should be established wherever they will serve as safe guides in making decisions on many individual problems that call for the answer "Yes" or "No."**

Great care must be used in establishing policies as fundamental guides to decisions, particularly those which apply in handling men. This important matter is thoroly covered later in the major division of this course on managing men. Let us here look briefly at one or two aspects of the problem, particularly at scientific management, involving time and motion studies.

The Place of the Time Study in Management. A director of production recognizes the fact that labor trouble often comes from cutting piece rates; he knows that he must guarantee his rates, and therefore that rates must be fixed to stand as long as possible. This can often be done best by time studies.

A worker may lack both ability and desire to increase his output. But management can help him do this by having someone who is well qualified make a stop-watch time study of the worker's movements while on the job, with a view toward eliminating waste motions.

Time and motion studies are used in determining a fair standard of daily output per man. Analysis of time studies often shows that subtracting from or perhaps adding to the number of men in a gang will give an increase in output per man. Time study is useful, too, when applied to the detection and correction of the inefficient operation of machines or other equipment. In the case of metal cutting, for example, time studies lead to an investigation into the kind of metal cut, the adaptability of the machine to the work, the power of the machine, the speed of operation, and so on.

> **Time studies of movements embrace men, materials, tools, and machines; their aim is to find the best combination of these factors in production.**

Time study is valuable in determining the efficiency of supplies and tools, as by investigation concerning clearances and angles, kinds of steel, types and amount to have on hand, forging prices, heat treating, and so on. In the garment-making industry, time study is applied to the determination of the best grade of sewing thread to use, as by ascertaining the value of time consumed in repairing breaks and weighing this against the higher cost of better grades of thread.

Time Study in Other Departments. In the office also, and even in the sales department, the time-study principle has been used to increase profitable production. In fact, it may be said that—

> **Wherever any activity of business permits of some measure of standardized procedure, there the opportunity for profitable time study exists.**

Sales managers often say that time not spent by salesmen in the presence of a customer is time "wasted." An important problem in sales management is how to cut down to a minimum the time which salesmen are forced to spend in traveling from one prospect to the next. Here routing the salesmen is similar in principle to routing work thru a shop.

In planning the office routine, time studies have been effectively used to increase clerical efficiency, as by demonstrating with mathematical accuracy the value of using certain labor-saving equipment, such as the dictaphone, which may save much time for both dictators and typists. Also time study applied to the operation of typewriters has often led to the adoption of standardized methods of work, bringing greater output and ease of output on the part of the typists.

THE RESPONSIBILITY OF MANAGEMENT IN AVOIDING WASTE

We can see the value of close analytical observation of specific operations on the part of the management applied for the purpose of bringing to light waste of time and effort. Let us remember that—

> **Management must assume much of the direct responsibility for detecting all kinds of wastes in productive processes.**

In a factory manufacturing silverware coffee pots, casseroles, and so on, the assembling operation, which consists of soldering handles and spouts onto the bodies, was done at benches with three workers at each bench. Observation showed that frequently one or two of the workers would have to stop their delicate soldering operation while the other man at the same bench did a little hammering which was necessary in making the assembly. The slight vibration of the bench caused by the hammering interfered with accurate work on the part of other workmen at the same bench, if they were soldering at the same time. Also it was found that when supplies, such as solder and parts to be assembled, were delivered to the workmen, the delivery boy often had to reach across the workman's shoulder, thus interfering somewhat with his work.

This waste, once observed, was easily avoided by giving each workman a small separate bench. Furthermore, each bench was set at right angles to the wall with the light coming in at the workman's left—the best position for doing delicate work. A tray was attached to the right hand side of the bench in which deliveries of supplies and parts could be made without interfering with the workmen. The output of these men was increased about 11 per cent as a result of these changes.

Getting the Workers to Help Cut Waste. Getting the active co-operation of workers in solving the problem of cutting costs is a vital problem everywhere in management. It involves the application of principles of good salesmanship, as presented later in this course; and, as in the case of all the problems of management, it involves the application of good common sense, backed by knowledge of fundamental principles derived from the experience of all profitable management, particularly those principles presented in the section of this training course on managing men.

Let us here have a preliminary glance at one side of this great problem of getting the interested and active co-operation of workers—the wage incentive. At the same time let us remember that all incentives to good quantity and quality of production are not wage incentives. Good working conditions, good homes, pride in craftsmanship, joy in exercising the creative function, and so on, are, under skillful management, also effective incentives to efficiency.

The determination of the particular kind of wage incentive to use depends to a great extent upon the type of person affected and the character of the work. Many high-type salaried workers feel that they are accepting their salaries in exchange for their whole time and best effort. They may even be offended if they are offered extra compensation for what they aim to give anyhow. It is a principle of profitable management that—

> **Incentives to good work must be varied to fit the type of work and worker involved.**

You could hardly say to a man who is doing slow, patient, careful inventive work, "Invent faster; I'll pay you a $100 bonus for each acceptable improvement you make if turned out in record time." To this type of worker, whose work requires painstaking care, infinite patience, and very high ideals of craftsmanship, such an offer is likely to be negative—to antagonize rather than to stimulate.

Special types of workers require special types of wage incentives. In general, however, it may be said that—

All wage incentives, to succeed, must be planned with absolute justice to both employer and employe.

Nothing about wage incentives is more basic than that. And in establishing just wage incentives for factory workers, the use of time study has been found helpful and in some cases practically indispensable; for it is a scientific method of avoiding guesswork that may be unfair, either to employer or employe.

This matter of determining the best kind and quantity of compensation is one of the most vital problems of the day in the entire field of business management. It will be covered completely in the section of this course on Managing Men.

NINE POINTS TO REMEMBER ABOUT PRODUCTION MANAGEMENT

In concluding this part of our study of production management, let us set down nine points to remember:

1. Every business has a production problem and every department can profitably apply production principles.
2. To secure the right quality and quantity of output at low cost is the general aim of production management.
3. Attaining this objective requires ability to apply principles which underlie the correct solution of both the basic problems of production and those that are called "day-to-day" problems.
4. Successfully solving production problems requires skill in planning the work of every department in production. The work should be made to proceed in an orderly, uninterrupted, and well-balanced flow. Congestion or idleness at any point in production indicates poor planning.
5. In keeping costs down and in remedying all wastes and troubles, management should get at the *source* of the waste or trouble. Where any plan of production is interfered with and the schedule breaks down, management must get at the true causes of the breakdown. Poor planning by management is often the source-cause of the trouble.
6. Management has the responsibility of making and profiting by observations which reveal waste of time and effort as well as unnecessary fatigue. These observations may be made, in part, by the use of time study.

7. Management also has the responsibility of getting workers to co-operate in solving the problem of cutting down waste of all kinds. Wherever a timesaving method of operation is introduced, management must secure the wholehearted co-operation of all who will be affected by the new method. When a new method does not work well, the cause is often lack of workers' co-operation rather than deficiency in the method. Management has failed to use good salesmanship.
8. It is up to management to provide work incentives that stimulate every worker to his best efforts. The kind of incentive and the way it is given must fit the mental characteristics of the worker.
9 Management should establish definite policies for handling the major problems which involve the relationship of employe and employer, and should "sell" the fairness of these policies to the workers.

* * * * * * *

A phase of production that requires special emphasis at this point—one that must receive a great deal of attention from management and one that particularly requires of management knowledge of economic fundamentals as presented at the beginning of this training course—is the matter of purchasing materials and supplies, or merchandise if the business is that of a wholesale or retail store. Some of the more fundamental principles involved in the successful management of a purchasing department are briefly presented in Part III of this executive manual.

SECURING LOW-COST PRODUCTION

Part III

PURCHASING PRINCIPLES

THE extent of purchasing in business is indicated by the simple fact that every sale on one hand is a purchase on the other hand. Selling activities are important, and so are buying activities. Both, well handled, are powerful factors in profitable management. Where the "production" problem consists largely of buying stock for resale, as in a retail store, it would be difficult to determine whether buying or selling is the more important.

In manufacturing plants, efficient buying of materials and supplies plays an important part in securing low-cost production. Not only do the prices paid for materials and supplies affect the cost of production, but also the quantities and qualities and the deliveries of what is purchased are vital factors in determining producing costs.

The basic objective in buying materials, supplies, and parts is to keep down costs of production while maintaining the right quality of product.

That is the fundamental aim in solving the purchasing problem. It implies the idea of paying the price necessary, and no more than necessary, to get the right quantity, kind, and quality of whatever is purchased; to get delivery of it at the right time; and to carry a minimum stock at all times.

BUYING IN RELATION TO SELLING

Everybody and every business has a buying problem as well as a selling problem. Intelligent buying of goods and services for personal use is an important factor in everybody's success in life. Sound purchasing principles are guides to efficient buying for personal use as well as for business purposes.

In some business concerns buying is more important than selling. Consider the broker who gets a bid from a wholesale grocer for a large quantity of a specified quality of canned peas. Can he buy that quality of peas in that quantity at a price that permits his customary margin on the transaction? Where? His more difficult problem is in buying. He often makes contracts, in advance of selling, for the purchase of entire crops from the growers. At many places and times he encounters keen competition among the other buyers of these crops. Once his supply is assured, however, his selling problem may then become more important.

The Buying Problem in Merchandising. In nearly all retail and wholesale houses the buying is done either by the proprietor himself or, in the larger houses, by well-trained, experienced, and well-paid buyers. In the larger retail stores the buyers are usually the department heads, who manage sales as well as purchases of stock. Their work is supervised by a merchandise manager (who may have divisional merchandise managers assisting him) who controls stocks in relation to sales (turnover) for the store as a whole. In smaller retail stores the proprietor himself usually does most of the buying.

Materials affect cost of production thru:

1. **Their cost in raw state.**
2. **Their availability.**
3. **Need for inspection.**
4. **Space they occupy.**
5. **Adaptability to use.**
6. **Efficiency of performance.**
7. **Waste involved.**

The chain-store plan of merchandising has a buying advantage, in that it provides a purchasing department at headquarters, where the buying for many stores is centralized. This permits more specialization in buying; that is, one buyer can concentrate on purchasing a narrower range of items and lines. It lowers the cost of performing the buying function. Also the purchase of larger quantities of single lines and items enables the buyer, in many cases, to get larger discounts off the list prices. But chain-store buyers do not directly control the sale of what they buy, except in some of the smaller chains. Buyers who work inside the store can better keep in close touch with changes in demand.

The Place of Purchasing in an Organization. Just what place should purchasing have in an organization?

Practice varies widely on this point, because of the varying importance of purchasing in different lines of business. The director of purchases for a railroad may be, and often is, a vice president. The purchasing of live stock in the packing industry, of raw cotton for textile mills, and so on, is also important, requiring high grade specialists.

The tendency in many lines to-day is toward more scientific buying, involving the use of definite measurable standards where possible, such as heat units in buying fuel and chemical ingredients in buying steel. In some lines a high degree of trading ability is important, as in buying live stock. In a larger wholesale or retail business the buying is done by merchandising and selling specialists. In a business, however, where purchasing consists principally of buying standard parts or articles at standardized prices, or for materials the market prices of which do not fluctuate widely, purchasing involves less responsibility. Thus:

> **The requirements of skill and intelligence in purchasing vary with every line of business, and these requirements determine the place and relative impor-**

tance of the purchasing department in the organization.

In nearly all cases buying is set apart as a specialized function in the organization. Even a small business finds it profitable to centralize this function and place it in charge of one capable executive.

Buying, as well as selling, is an art. Efficient buying requires special training and ability, and the establishing of basic policies, the same as in sales or finance. Principles of salesmanship, presented later in this course, can be used in "selling" those from whom we buy on giving us fair prices and good service.

Policy and Personal Judgment in Purchasing. The more important that buying is in any business, the greater the need for a definite buying policy and a system. But "system" must not be made a substitute for personal judgment based upon sound policy. Take a modern department store, where buying control is centered in a merchandise manager. Sales records are used to reinforce the personal judgment of the buyers rather than to serve as a substitute for it. Past sales records tell how goods have moved under different price ranges and under different ranges and proportions of sizes placed in stock; they tell what staples sell best at different times of the year; and so on. Consequently the buyers, when they go to market (or when salesmen come to them) will be fortified with facts which supplement personal judgment.

Retail-store buyers, and certainly merchandise managers, know what is ahead in their trade zone as to changes in the purchasing power of customers as a whole. They are necessarily students of local business conditions. Their judgment concerning oncoming changes in business conditions as a whole are reflected in their buying—in the prices they are willing to pay for merchandise and the quantities they contract for—as well as their judgment concerning the future of local demand.

Limitation of the Buying Function. In a large manufacturing business specifications as to quality of materials and supplies purchased usually originate in the engineering department. Quantities and delivery dates are fixed by the planning department, always, of course, subject to limitations imposed by prospective sales and by the firm's financial condition.

The purchasing department in factories is usually not given full authority to change quality, quantity, or even delivery dates, altho it often suggests changes acceptable to other departments. Such changes may at times give the buyer a price advantage, but this advantage might be outweighed by a loss resulting from a change in quality, quantity, or delivery. A basic principle of profitable management is here involved, as follows:

> **In appraising the value of advantages gained at one point in a business organization, they must be balanced against their cost at other points in the organization.**

But when it comes to the question of where to purchase and the price to pay, the purchasing department generally is given a free hand; and this part of the problem—to buy exactly what is wanted at the lowest available price and to get delivery at the right time—is sufficiently difficult, as a rule, to command all the attention of a purchasing department in a large business.

The Problem of Buying the Right Quantity. The quantities of materials and supplies purchased in a manufacturing plant must be such as to permit continuous and well-balanced work all along the line of different processes, and purchases must be held down as closely as possible to the minimum quantities that permit this kind of operation—unless a price advantage would warrant the purchase of larger quantities when the cost of storing and carrying the excess quantity, also the chance of a change in demand or in design, and so on, are taken into consideration.

Efficient purchasing means buying the right quantity and quality, with assurance of timely deliveries, at the lowest available price—with quantity discounts taken into consideration.

Purchases of quantities that are too small may cause financial loss thru unbalanced production, with idleness of machines and men; purchases of quantities that are too large tie up an unnecessary amount of capital, take up more storage space, require more insurance, are subject to depreciation, and involve the risk of becoming out of date before being used.

What quantity purchased is too large and what quantity is too small? is a question of great importance in the management of every line of business and in every department. Many concerns establish minimum and maximum quantity figures below or beyond which stocks on hand are never allowed to go.

A business that must carry many items in stock—and many carry from 1,000 to 2,000 or more different items—can often cut thousands of dollars from its inventory of stock by carefully establishing maximum and minimum quantities and keeping its stock within these quantities; always, of course, providing for exceptions that are warranted by advantages which may at times come from buying more or less than the maximum or minimum quantities established. In other words, the maximum and minimum limits should not be so rigidly fixed that changes could not at times be made to meet emergencies or the changing needs of a growing business, or of a shrinking business.

Insuring an Adequate Source of Supply. Insuring an adequate and continuous source of supply is another essential aspect of the management of buying.

A common method of minimizing the risk of not getting desirable quantities of materials in an emergency is to apply the policy of buying from a number of sources. This policy has its advantages—and disadvantages. When the total quantity purchased is divided among two or more suppliers, it may happen that each supplier's portion of the order is not large enough for him "to bother with"; at least not large enough to warrant any particular attention to service. Furthermore, the advantage of keeping several sources of supply "alive" may be offset by a higher price on the smaller quantities. There is also the credit factor to consider. When a considerable volume of business has been given to a supplier for a long time, that supplier is more likely to be liberal in his credit arrangements in time of emergency.

Thus in buying large quantities of a basic commodity, such as iron or steel or lumber, the question of whether or not to divide up the orders, among several suppliers is an executive problem, with many angles to be considered, weighed, and balanced. It requires application of the principle of weighing advantages against disadvantages.

Sometimes control of supply is gained by owning the source of supply. Some city newspapers have their own paper mills, and even their own forests as sources of wood pulp. Even railroad and shipping facilities are owned by some large enterprises as a means of insuring an uninterrupted flow of incoming materials and supplies as well as outgoing products.

Contracting for a specific quantity of materials over a definite period of time is a measure often adopted for insuring an adequate supply. The contracts of milk distributors and butter makers with dairy farmers, and the contracts of sugar mills with beet raisers, and so on, are examples.

Buying Goods of the Right Quality. Let us now briefly analyze quality as a factor in good purchasing.

Obviously, in retailing, the quality of the merchandise purchased must meet the demand of the particular class or classes of trade to which the store is catering, remembering that the quality of many things purchased by consumers "is remembered long after the price is forgotten." This simple trait in human nature—to remember satisfaction or dissatisfaction with the quality of what is bought and to forget the high or the low price—can well be given consideration in manufacturing as well as in retailing.

A manufacturer in New Jersey hired a purchasing agent who knew "all about" buying. He did succeed in "beating down" many prices, but soon the bookkeepers complained of the quality of their loose-leaf books, truckers protested at the flimsy boxes, and the factory foremen were up in arms against the irregular quality of their raw materials and supplies. The losses from poor quality more than offset the "savings" in cost.

> **Not to buy on price alone, but to buy the right quality at the lowest available price for that quality is the aim of the efficient purchasing agent.**

Buying "on specifications" insures the right quality in materials—if the materials are subject to exact grading or to scientific analysis, and if specifications are the kind that can be accurately checked to make sure that the goods are "up to specifications."

There are many materials, such as textile goods in which pattern enters, where personal judgment is the only criterion. But if quality can be definitely specified, as in a chemical analysis of coal or steel, it usually pays to make such specifications, particularly when large quantities are purchased. This means of insuring the right quality is constantly being extended in its use. Gravity tests make crude oil a recent addition to the list of commodities purchased on the basis of scientific analysis of the product. It is a principle of good purchasing practice that—

> **The more definite the specifications of quality are, and the more exactly these specifications fit the quality requirements, the more likely will the right quality be purchased.**

This buying principle holds in all cases where the buyer can check up on quality as specified when the goods are delivered. In some cases, as in the purchase of paint, it is difficult to check quality with complete assurance. Wherever an accurate check on quality of goods delivered is impossible, there the buyer must, of course, depend more upon his own judgment and the integrity of those from whom he buys.

Knowing the Uses of What Is Purchased. The category of a purchasing agent's information should include the uses of the things he buys.

One construction company had always bought reinforcing rods for concrete cut to length at the steel mills. For this cutting, a substantial extra charge was made. The purchasing agent learned, however, that many full-length rods had to be cut on the job for odds and ends. He suggested a tryout of buying regular mill lengths only and cutting everything on the job. The result was a substantial saving.

Again, this same firm used large quantities of "tie wire"—a soft iron wire which comes in rolls and is cut up into very short pieces. This was being purchased in standard full-length rolls. The purchasing agent found that odd-length rolls could be bought from the mills at from 40 to 50 cents a hundred pounds less than standard stock, and that it was equally well suited to the work. This saving came from knowledge of wire-mill practice as well as use of the product. Here is the principle:

> **The better the purchasing agent is acquainted with the uses and performance of what he buys and with the customs, methods, practices, etc., in his sources of supply, the greater is his ability to save money.**

In applying this principle, he must obviously get the users of what he buys and the suppliers to supplement his stock of information.

Having bought one brand or grade or style over a period of time, it is a common human weakness to continue buying it "forever after." But application of the foregoing principle helps in avoiding this weakness, for knowledge of uses and sources suggest profitable changes in what is bought and where it is bought.

While it is seldom primarily a purchasing agent's function to specify materials and tools based on performance, he should be interested in reports and records of performance; and in many cases his decisions are based upon definite reports of the performance of a given material. In buying belting, for example, some companies maintain a card record of every drive in the plant. On each card is recorded the size of belt, the power transmitted, the repairs necessary, and the operating conditions. Obviously, these records are very valuable in buying new belting.

The Scope of the Purchasing Agent's Authority. It is apparent that the scope of a purchasing agent's authority varies widely under differing conditions, and that fixing the right limitations upon the scope of his authority is a very important problem in general management.

In buying motors for the manufacture of an electric power washing machine, should the specifications rigidly call for a Robbins 110-volt alternating current, 1/4-horsepower motor, and must the purchasing agent necessarily buy this particular motor; or could he, if he thought it advisable, select some other motor of the same power and voltage, on his own initiative?

This makes plain the necessity of defining the scope of the purchasing agent's authority. If the washing machine is designed for using either one of two or more motors, the purchasing agent should be free to choose the motor that would best help in attaining low-cost production.

One limitation on the scope of the purchasing agent's authority is the extent of his ability and willingness to co-operate with others. In fact, this is a very important factor; it underlies his gathering of knowledge concerning the uses and the performance of what he buys. A general principle of profitable management is involved, as follows:

> **Extensions of the scope of authority must be based, among other things, upon the individual's ability to get and to give intelligent co-operation to others in the organization.**

Greatly restricted authority must be given to a buyer in a retail store who feels that his job is merely one between himself and his merchandise manager, or to a purchasing agent who confines his co-operation solely to the production department. For extension of his authority, a buyer or a purchasing agent must be able to see all angles of his job in relation to all other parts of the business. The man who intentionally bought faulty rear axles for an automobile company at a great "saving" in price—believing the imperfections were not serious—thereby caused his company to lose thousands of dollars before it could recuperate from the reputation of producing a car with "rear-end" weakness. He did not co-operate with the sales, or any other, department. His scope of authority should have been zero.

The Problem of Insuring Deliveries on Time. Timely deliveries of supplies and materials are about as important as quantities and qualities. Timeliness is very important in maintaining well-balanced production; for delays in delivery are costly if they upset production schedules. We can also see an important connection between traffic management and timely deliveries. There must be co-operation between the traffic and buying departments to insure timely deliveries. Establishing maximum and minimum quantities for stock on hand also helps gain timely deliveries thru prompt buying when stock on hand is down close to the minimum. It is a fundamental axiom in purchasing that—

> **Whatever is bought is not ''wholly bought'' until it is delivered—and it should be delivered in time to be of maximum service.**

Of course, it is not always the purchasing agent's fault, directly, when materials bought are not delivered in time to be of maximum service, but a good purchasing agent will be able to cut down the number of times that this happens, by getting and giving the right kind of co-operation from and to other departments.

An efficient purchasing agent keeps his eye on important outside and inside developments, particularly outside developments which affect his sources of supply, such as impending strikes and traffic difficulties. He knows that deliveries in some cases vary with seasons, and he knows and anticipates any seasonal rush periods in using what he buys.

A good purchasing agent keeps a record of broken delivery promises; he knows what promises may be relied upon. He knows when follow-up methods must be used and how to make his follow-up effective by applying some of the fundamental principles of effective business correspondence, as presented later in this training course. When he must have "rush" delivery, he is able to get it.

Thus, in this matter of time, as well as in matters of quantity and quality, a purchasing agent must know, and be able to use what he knows in getting the right quantity and quality of what he buys delivered at the right time.

THE BUYER'S PRICE PROBLEM

Buying at the lowest prices consistent with getting the right quantity, quality, and delivery is the buyer's problem. He must remember that a low price may in reality be a "high" price, if other requirements are sacrificed in order to get the low price.

Assuming that all other requirements—the right quantity and quality and timely delivery—are provided for, the buyer's price problem may involve a stand on the question of speculative purchases; that is to say, on purchases made in the light of anticipated price changes.

Some take the stand that a certain amount of speculation in buying is allowable or desirable; others that speculation is not a proper activity for either a manufacturing or distributive business. But it may be said that—

> **If the purchasing function is to help in cutting down the cost of production as much as possible, then in many cases purchasing decisions must take advantage of probable price changes.**

That is where a purchasing agent or any buyer can use what he knows about the causes and effects of price changes, the business cycle, general market conditions, and conditions of supply, which, in changing, tend to cause price changes, as covered in preceding executive manuals.

It is not always possible to avoid all risk of loss or gain from future price changes. An efficient buyer will be able to cut down the losses and to multiply the gains on this score. But decisions as to the course of prices in general and the prices of individual commodities should not be made without making sure, often by the conference method, that all probable changes in both the demand and the supply sides of the market are carefully taken into consideration—implying full understanding of the economic fundamentals covered in Executive Manuals 2, 3, and 4.

Furthermore, the relation between purchases and probable sales is always an important consideration. Here, again, ability to look ahead is necessary, for—

> **The volume of buying must not be allowed to get very far out of line with the volume of sales.**

It is clear enough that any business which neglects to follow closely the movements of the business cycle—curtailing the volume of buying when curtailment of the sales volume is at hand and increasing the volume of buying at the start of an upward swing in prices—is neglecting the chance to avoid losses from being caught with large stocks of high-priced materials at times when prices are falling, and, at other times, caught short of stock with which to fill increasing orders.

Our preliminary study of the business cycle has an important bearing upon the buying problem. It helps us tell better when to buy in larger quantities and when to buy in smaller quantities, by improving our ability to anticipate the times of reaction and of pick-up in our sales volume.

What Is the Right Price? In concluding our preliminary survey of purchasing, let us face the question, What is the right price?

This matter of price is often a cause of "conflict" between buyer and seller. A salesman who has the right attitude toward his job desires to sell the right quantity and quality of goods, delivered at the right time, as much as the buyer desires to buy them. But the buyer would like a lower price if he could get it, and the seller would like to get a higher price if he could.

We know that costs and prices vary with variations in quality, quantity, and kinds of goods; also, at times, with differences in the date of delivery, as when premiums are offered for early delivery of urgently needed products.

Exactly what is wanted must *first* be definitely established in the buyer's specifications. Then his question is, "How can I get what I want, or the nearest thing to what I want that is available and is satisfactory for the purpose, at the lowest possible cost?" But the buyer's first problem is to KNOW what he wants, for—

> **When a buyer knows exactly what he wants—how much and when as well as what quality—then he is in the best position to get what he wants at the lowest available price and on the most favorable terms.**

Furthermore, he should know the relative importance of his several objectives. In buying certain things, such as steel for the manufacture of special kinds of tools, the quality of the steel may be first in the order of important objectives. But when buying a product of standardized quality, such as copper or lead, price is likely to be of first importance; that is, price as related to the *time* of purchase. In buying nonferrous metals, forecasting the probable trend of change in price is of primary importance in determining when to buy and the quantity to be purchased, requiring application of a thoro understanding of how the law of supply and demand operates thru changes in relationship of effective supply and demand.

When the Buyer Tries for a Lower Price. While the prices of many things are, at any one time, definitely fixed by the seller, they are not always maintained against a buyer's insistence upon a lower price, especially so where the prospective sale is a large one. The buyer, of course, will not waste time in trying for a lower price when he *knows* the price quoted on the quantity and quality he wants will be maintained, even tho the loss of the order is at stake on the part of the seller. Unless he is sure that a quoted price is the seller's "low," however, he can well afford to make sure; and he must make sure that a competing seller would not give him the quality, quantity, delivery, and service he wants at a lower price.

In order to make sure of getting what he wants at the lowest price, he must, in many cases, stimulate active competition between suppliers, and then choose the supplier that offers the best deal; making sure, however, that the supplier chosen will not, at the price agreed upon, give him anything of less value than that agreed upon.

When there is really no competition and no choice of suppliers—just one source of supply—getting a lower price than quoted in the first place is, of course, more difficult. Then the buyer may suggest changes in specifications which make a lower price possible and still give him the right quantity and quality; or he may create additional sources of supply; or he may look for a substitute; or he may take advantage of the supplier's fear of the growth of competition, perhaps by citing a definite case where high prices and profits on an article quickly brought into the market a number of competing substitutes.

Then, too, the buyer can take advantage of many of the principles and laws of psychology which underlie good "buymanship," as well as good salesmanship, for the buyer as well as the seller can profit by a fundamental understanding of "human nature." It is profitable for a buyer to get the good will and genuine personal co-operation of the seller as well as for the salesman to get the personal confidence of the buyer.

This whole important matter of establishing personal relations that are most profitable in management is fully covered in the second major division of this training course, entitled "Developing the Executive Mind."

* * * * * *

In the next executive manual we shall make a brief preliminary survey of the problems of financing a business—how to finance the start of a new business and how to finance daily operation of the business—including the management of credits and collections. We shall there see the close connection between efficient financing and efficiency in every other department of a business. But before taking up that important part of business management, the following Check-Up and Executive Problem 6 should be used as a means of firmly fixing in mind the basic principles of securing low-cost production.

CHECK-UP ON PRINCIPLES

Use the following check-up to get the principles of this manual firmly fixed in mind. This will help you to handle the problem which follows. This check-up is entirely for your own personal use, so you need not send it in to the University.

	Check	
	Yes	No
1. The prime objective in production is to secure the best volume of output of the right quality at the lowest cost. Does this warrant a general policy of hiring low-salaried men to replace high-salaried men?		
2. Is the arrangement of the modern small kitchen, with the range, kitchen cabinet, table, etc., all at one's elbow, a practical application of one of the basic production principles?		
3. Mail order houses destroy practically all correspondence as soon as action upon it has been taken—this because with few exceptions all questions and claims regarding goods or service are made good in favor of the customer. Is this policy in conformity with one of the principles developed?		
4. A coal dealer has a very satisfactory adding machine which adds up to $99,999.99. This size is good for all regular work, but once a month in making up the trial balance the total runs over $100,000. This inconveniences the bookkeeper only slightly. He suggests, however, the purchase of a larger machine, which will cost $100.00 in addition to "turning in" the present machine. Is the additional investment warranted?		
5. The manager of a paper-specialty manufacturing company has to make up goods for stock in order to keep his force fully employed during the dull months. He can make fancy boxes, which require very little material but a great deal of labor per unit and cannot be marketed for six months, or cheaper boxes, which require considerable material and little labor per unit and can be marketed in four months. He chose the former. Do you agree with his decision?		
6. An office which uses card records extensively is considering changing the present system of cards, for a new system, which on the basis of results obtained by other offices, promises to give better satisfaction. The office manager advises a trial installation with a time-study test of both the old and new systems. Is this a situation where a time study would be useful?		

	Check	
	Yes	No
7. A company jobbing railway supplies purchases largely on contract. In drawing up these contracts, the purchasing agent often deals directly with officials of the supplying companies. He suggests that if he could be made a vice president, the added prestige would strengthen him materially in making such contractual arrangements. Do you agree that this is a point in favor of making him a vice president?		
8. A manufacturing company plans to change the follow-up of purchases from the purchasing office to the material order office. This will shorten the follow-up process, and since the material order clerks keep posted on manufacturing schedules and the progress of orders in the factory, they will be able to work with suppliers more intelligently in securing deliveries. Are these advantages sufficient to warrant the change?		
9. A manufacturer maintains strict maximum and minimum stock limits on most of his materials and supplies, but he maintains no limits on the supply of copper, of which he uses great quantities. Is he wise to make this exception?		
10. At the height of a period of general prosperity, with prices advancing, the manager of a twine department of a mill supply house has an opportunity to buy a six months' stock of binder twine at prices a few cents below the market. Crop reports, which indicate an unusually small hemp crop, will probably cause an immediate rise in the price of twine. Should the department manager stock up to take advantage of the situation?		

Executive Problem 6

GAINING EFFICIENCY IN LAY-OUT AND EQUIPMENT

Applying Production Principles
UNDER THE LASALLE PROBLEM METHOD

* * *

THE experience you will get in applying the principles of business management involved in this executive problem will give you increased confidence in your knowledge and a greater assurance in your ability to handle situations that may arise in your own business relations.

Prepared by the Research and Consultation Staff of LaSalle Extension University from an interesting problem which it has carefully investigated and analyzed.

YOUR STUDY PROCEDURE

When you have carefully read and studied the Executive Manual and have used the Check-Up on Principles to secure a better grasp on principles, you are ready for the final step.

Tho it will take you only a short time, relatively, to take your final step, a very great personal benefit awaits your reading and handling of the executive problem.

What is true of this problem is true of all of them. You read a Statement of Facts, observe what are the more important facts, analyze these facts to get at the heart of the situation, reach a decision regarding the best thing to do, reach judgment, and act accordingly.

The facts as presented are representative of what executives face. They have been especially selected because they present a practical business situation which is comprehensive and makes it possible for you to apply practically every fundamental principle presented in the manual. You will employ your powers of analysis in the manner and form that is characteristic of successful executive analysis and will decide and act as executives do.

When you have carefully digested the Statement of Facts in the problem, you are ready to take up your Working Papers. These Working Papers are developed in the form which corresponds closely to that in which a real executive gets his facts together, thinks them over, decides upon them, and initiates whatever action is necessary. You will be able to reach your decision with very little writing, for a premium in business, as well as in this plan of training, is placed upon headwork rather than upon penmanship.

When you have completed your Working Papers, send them to the Business Management Instruction Staff, who will give them careful, individual, and personal attention.

Executive Problem 6

GAINING EFFICIENCY IN LAYOUT AND EQUIPMENT

If you see a $10 gold piece lying on the floor, you pick it up, whether it is found in a theater, a house, an office, or a factory.

The ambitious executive regards ideas in just that way. He is constantly on the lookout for them. You have such an opportunity here. You have just studied some of the fundamental principles of production. This is usually considered a question which deals exclusively with factories. Yet business is coming to realize more each year that the production engineers have pointed out principles which all departments in a business can profitably use.

In this problem, production principles are to be applied to the production of service; for that is what the wholesale and retail merchant makes and sells. He buys goods in large lots, stores them, displays and sorts them into the quantities that each buyer needs, distributes them, and may extend credit to the buyers. These services he "manufactures" in the store, which is his "plant."

In this problem you are called upon to act for Mr. Forest, the superintendent of the Neal Wholesale Grocery Corporation, which owns several wholesale groceries in the Northwest. (As you travel week by week, from one business and one position to another, put yourself into whatever "shoes" are empty, according to the problem, and get all the experience possible.)

THE STATEMENT OF FACTS

We are just now interested in the Neal branch in Peterville, the most recently acquired of their chain. This branch should be prosperous, for it has unusually little competition. They are handling a large share of the grocery business in their territory and they get fair prices. Yet profits in this branch are the lowest of all. The buying is done for all the branches at the same price, and examination of the sales figures indicates that stock is moving satisfactorily. Apparently the cost of service is out of line. You, Mr. Forest, have come on to learn what's wrong and to advise a remedy.

Peterville impressed Mr. Forest very favorably on his arrival. It was a railway division point and the trading center of a rich farming country. It had a population of about 30,000 and was growing, but there was no reason to believe that it would grow rapidly or become very much larger.

For a town of this size, the Neal branch was unusually large. This was due to stores in several near-by towns which depended on its frequent deliveries. The motor truck was responsible for much of this. The business of this jobbing branch had been largely local in its distribution until the motor truck made it possible to deliver very promptly and at low cost in the radius of 35 miles which they covered.

The plant showed the result of this rather unexpected growth. The ground-floor plan is as shown in Figure 1.

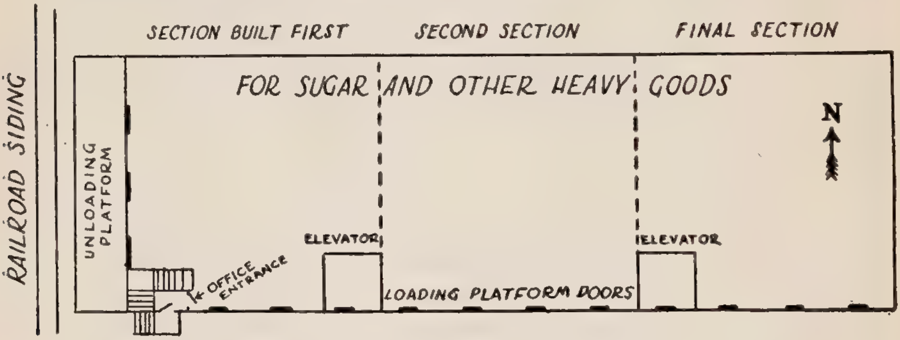

Figure 1. The Present Floor Plan.

You will see that the part first built was alongside a siding, and had a platform from which two cars could be unloaded. This had been ample at the time. Now an average of four cars a day were received, and at times eight cars would arrive in Peterville in one day. The expense of hauling much of these goods from the team tracks was great. The second and third sections of the building were built farther from the siding, in the way shown, since the previous owners could not get the property with trackage rights alongside of them.

The plant was very well built, and was designed so that a fourth story could be added. In expanding, however, shipping space had been most needed, and therefore additional three-story units of similar construction had been added to the first. Yet even now the first-floor space was inadequate. Traffic conditions required each truck to stand lengthwise beside the building as it was loaded. This permitted nine trucks to be loaded and unloaded at once. And, as will be seen, all the south half of the first floor was devoted to this work.

The confusion which Mr. Forest found on this floor from 7 to 10 o'clock each morning appalled him. Some gangs were working feverishly to unload the cars which had been placed the night before. The elevators were jammed. Sugar bags and barrels were being trucked the length of the building.

At nine loading platforms stood nine truckmen, each striving to have his orders completed first, and too often not waiting to make sure that all were filled before he started. Prompt service had long been a watchword with this firm, and as an incentive each driver was allowed to stop work as soon as his trips were completed. The trucks making local deliveries made the local "pick-ups" in the afternoon, tho three trucks made some "pick-ups" while the others loaded. These often would unload at the first doors made vacant by departing trucks. All this inefficiency revealed part at least of the trouble with profits. Yet the men were all working with the best will in the world.

In the office, Forest heard more stories of trouble. The sales department felt they were not being supported by the delivery service. The drivers were so anxious to cut their trips short that they gave scant courtesy to customers in the more distant sections, where the company was trying to extend the trade. The traffic man wanted to handle these small and scattered shipments by outside transfer companies until the business reached a sufficient volume to pay for the time taken. The sales manager liked the advertising which their big, good-looking trucks gave the line, and insisted that even a small shipment be made by their own equipment. He had learned, however, that the men had their own way of dropping such a customer from the list.

In these two factors, Forest found the reason for the low profits. A plant which was originally fairly well planned had grown till unloading and loading became enormously expensive. And a worthwhile ambition for prompt and attractive delivery service had resulted in misunderstandings between men and departments and inferior service to the customers. With the sources of the trouble located, Mr. Forest (you, yourself) sought remedies for them. He proposed to unload four cars at once by leasing for twenty-five years 100 feet of 15-foot shipping platform just north of their platform, for which their neighbor had little use. That would cost $150.00 per month—a high price.

He then proposed to rearrange the first floor as shown in Figure 2. The office was on the second floor of the first section built. He planned to put this as far as possible from the valuable railway siding. He planned a conveyor system along the unloading platform and up to the second and third floors. All except the sugar and similar heavy goods would move up to their floors in this way without trucking and without use of the elevators. The heavy goods would then be stored on the first floor nearest the siding.

He planned to provide convenient room for six trucks only. For these he planned a covered shipping platform to which the trucks

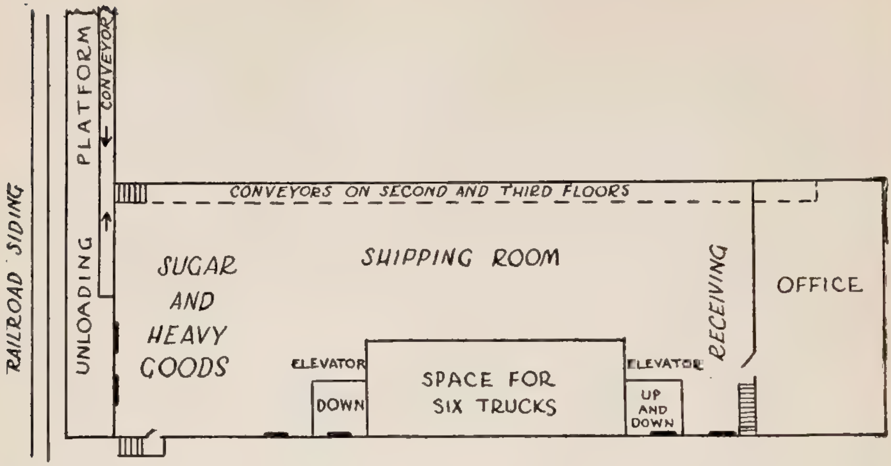

Figure 2. The Proposed First Floor Plan.

could back, and where they would be entirely protected, so that they would not freeze even if loaded the evening before. This plan would release the elevators from loads up, and would give ample capacity for taking goods down. One could be used also to take "pick-ups" to the upper floors.

He also planned to schedule the work of the trucks. The six which went to the most distant points would be loaded as far as possible the evening before, and would be loaded and dispatched by 9 o'clock next morning. During this time, the other trucks would be making "pick-ups" from the freight stations, etc. They would be arriving as the others left, and would have ample time to make their deliveries to the nearer points, since efficient handling would make their time at the platforms short.

Next, Mr. Forest got estimates on the cost of the proposed changes —$43,000. He had the accounting department figure the present cost of handling. He was not surprised to find it over $1.00 per ton, but this could be reduced to less than $0.15 per ton from car to the second or third floors after the conveyors had been installed. So great would be the effect of the saving in labor and of the lessened congestion.

While this plan was extremely attractive, Mr. Forest also thoroly analyzed another possibility. The corporation had recently completed a "plant" in Charlotte, which was designed to handle the same volume of business as the Peterville "plant." It was in a rapidly growing community and had been built on the unit plan, and could be doubled by adding another similar unit soon, another unit later, etc. The increase in capacity could only be made efficiently, however, by adding a complete unit at a time.

The Charlotte branch was located on the outskirts of town and had plenty of room to grow. (Similar land could be obtained here by moving a mile out.) It had a siding suitable for five cars, and a shipping platform to which twelve trucks could back. The cost of handling from car to warehouse floor was $0.15 per ton. It had cost $220,000 complete. Would it be better, all things considered, to sell the present building and build along the same lines as at Charlotte?

The Peterville "plant" stands at $175,000 on the company's books, tho it is really worth more, yet he finds that they could not get more than $150,000 for it, since there is little demand for buildings of this type in Peterville. The total cost of a change to a new plant, therefore, would be $245,000.

The cost of changes and conveyors added to the present valuation of the Peterville plant would make the investment in a remodeled plant $218,000. But to this the capitalized cost of the rent of $150 for the shipping platform must be added, before a fair comparison can be made.

From his knowledge of management and his experience with similar problems, it was not difficult for Mr. Forest to recommend a plan by which the trouble with the drivers was ended. He first had a time study made of the work of each truck and then established weekly wages, based both on the mileage covered and on the hours they had to put in. To this he added a system of penalties for errors in delivery, and of bonuses for increases in the sales made on the routes they covered. While these bonuses were small, they should make big differences in the co-operation given to the salesmen.

It took more study to determine what plan to suggest to improve the "plant efficiency," however. Before Mr. Forest was ready to recommend either plan, he asked himself many questions to determine how the principles of efficient and profitable production could best be applied here. You will find these questions outlined on your working paper. Turn to it and you will see how they guide you to a correct solution of this and similar problems.